NATURE'S INCREDIBLE HARDWARE/SOFTWARE SYSTEMS

INTRODUCTION TO A FOUR-DIMENSIONAL SCIENCE

BY NOEL HUNTLEY

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COMPARISON OF NATURE'S AND MAN'S HARDWARE/SOFTWARE SYSTEMS

	Man-made Computers	Nature's Systems
Structural principle	Linear	nonlinear/holographic
Structural foundation	Single level	Multilevel
Level of reasoning	3D logic, e.g., A and B (such as two bits) are separate or connected	4D logic, e.g., A and B may possess any degree of correlation between them
Information system	Binary	Contextual
Hardware/dimensions	Matter, 3D and detached from spacetime	Oscillations, 4D-3D, intrinsic part of spacetime
Software principle	Non-physical patterns	Same as hardware, modulations of hardware
Bit	Electrical charge	Quantum oscillations
Storage principle	Patterns of bits (electrical on/off)	Formative, cyclic, oscillatory
Communication system	Chains of isolated bits	Internally superposed in a gradient of contextual fields
Address system and mode of reference	Finite, very limited reference	Infinite--every point is a reference for every other
Encoding system	Contains significance, not geometric, is arbitrary	Entirely geometric, not separate from universal creations
Compatibility	Dependent on method/system design	All systems compatible
Organization	Separateness--integrations are composite	Separateness to unity, all integrations are holistic
Contiguity	External connectedness	Internal connectedness
Mobilizing agency	Newtonian forces, electromagnetic forces	Scalar--quantum action
Power source	Separate, finite	Innate, infinite
Applications	Newtonian systems	Non-Newtonian (inertialess systems)

1. INTRODUCTION

The subject is an unlimited one, and we could begin anywhere. Perhaps a comparison of nature's networks with man-made digital computers would be an appropriate way of introducing the material--though we cannot present a complete understanding while the comparison is being made.

Firstly, let us forewarn the scientific reader that this treatise does not present any methodology. The procedure, by which the information on how nature's systems operate has been acquired, is not given; this has been covered in the author's psychology dissertation.[1] Moreover, the treatment is somewhat discursive and not well linearly organized to avoid the material becoming segregated and fragmented when in fact it is all based on a few principles, and thus a "holistic" type of approach in presenting the data can have certain benefits.

The difference between the principles involved in man's computers and nature's systems is enormous, as is being suspected by investigators. Such investigators, and many others, seriously interested in nature's systems, now embrace numerous disciplines: physics, mathematics, psychology, biology, genetics, computer science, artificial intelligence, robotics, etc. Digital computers store and process information; they store both data for memory and instructions for processing the data. This information is structured from "bits," that is, small electrical voltages which are on or off. The state "on" or "off" can be made to represent something. This is achieved by using groups of 8 bits in which each of these 8 voltages are set high (about 5 volts) or low (about zero), according to a convention or code, and are allowed to represent something, such as letters or special characters, numbers, commands/instructions, or any meaning.

Note that the code, that is, a pattern of 8 bits (called a byte) is chosen; it is a system of relationships which man selects, containing certain significances. Nature, as we shall come to understand, operates on the geometry of spacetime, and thus all systems throughout the universe from spiritual to physical are compatible. Nature's systems are part of spacetime. Artificial computer systems are not an intrinsic part of spacetime and operate at the lowest quantum states, but even then only in a hardware sense. There is no quantum processing as with nature, which extends into the highest imaginable quantum states.

The first difference which strikes one in comparing man's and nature's systems is that our computers operate linearly, whereas nature's mechanisms are intrinsically nonlinear, that is, they are not separate from how space and matter are formed in themselves. By linear, we simply mean that, for example, one bit of information (a high or low charge of electricity) is located in

a certain position in 3D spacetime, or a conductor passes an electrical signal from one point to another in 3D space. (Further references to spacetime will imply 3D--for space--unless otherwise stated--there are countless levels of spacetime, all different.)

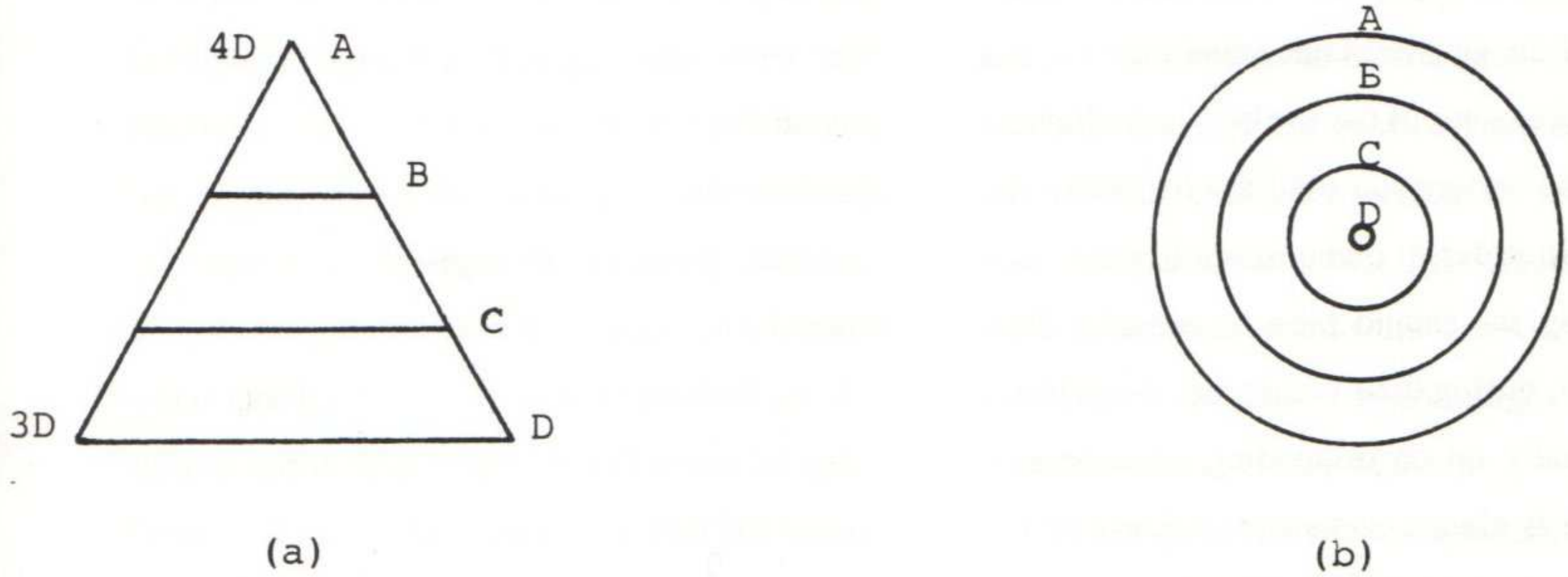
In other words, in man-made constructions, hardware is placed in space and its designs are highly specific and not amenable to probability variation by quantum reduction (the system will not change its hardware, etc.). Nature's systems operate not only below the physical level but are underlying even the electromagnetic level; they function at the level of the fundamental vortices or scalar oscillations of superspacetime.

Mainstream scientific information recognizes the nonlinear concept but fails to realize that true nonlinearity is internal nonlinearity--not external, of which the latter is in or along 3D space. It is important that one understands the difference between linearity and (external) nonlinearity but vital that one grasps the meaning of internal nonlinearity.

2. INTERNAL NONLINEARITY

Fortunately, we have a simple and common model for internal nonlinearity and its comparison with linearity for this very difficult subject. Consider a company organization; its staff members are always ranked pyramidally. This is how the universe's energies are configured. For simplicity, we shall imagine only four levels--see Figure 1(a): 1) the president (A), 2) a few executives (B), 3) several managers (C), and 4) proportionately more ground-floor workers (D). Now we must understand that only level D of the subordinates is in 3D (that is, can be fully accommodated by 3D)--this is the physical universe as observed at the ego level. For convenience we can visualize this as in Figure 1(a), with the president on the uppermost level of this hierarchy, but in reality, the more correct diagram would be Figure 1(b). The president at A is considered to have all the information of everyone else below (at B, C and D) and similarly an executive at B will have all the information at levels C and D and so on--each is an energy unit.

Thus, as we move up the hierarchy, D to A, we go to greater wholes, that are in reality greater quantum states, which span more spacetime, undividedly. All upper levels are capable of intersecting 3D and passing information to it. We shall go into more detail later but let us now apply the analogy. If one visited this company described in the above manner, and keeping in mind what it represents, we should at the ego level of observation only perceive the ground-floor workers at D--this corresponds to our scientific observation by the methodology of objectivity. We would not be aware of levels C, B, and A, nor the information being passed down. The workers would appear to be conducting themselves in an inexplicable manner; for example, they are working towards the production of a single product, which conceptually is passed down from the president and, in



(a) (b)

FIGURE 1

turn, a part of this product information is passed down from, say, one executive to a few managers under him, and similarly for the manager, who issues the final pieces of information, and consisting of the smallest conceptual bits.

The behavior of the workers is nonlinear and cannot be understood until the hierarchy is perceived. In order to demonstrate linearity as a comparison, we should have to consider the workers at D, during their breaktime. Note that there is actually no corresponding situation in reality; there is always some connection within the hierarchy even in chaos. We now see that their behavior can be understood. For example, one worker executes physical or verbal responses which correlate fully with the information received from another worker. This is like the particle level, involving collisions. We see that each worker moves in a manner to define 3D space; they are separate and always have their own space or location--this is a linear situation, which never truly and fully occurs in the universe. Now when the break is over we see a sudden change of behavior, in which, as greater conceptual wholes of information are passed down from, say, managers, several workers within a particular manager's department behave in unison. We cannot even speculate with any success that this behavior was due to signals passed very quickly from one worker to another (as Einstein did (speculate on this), in his thought experiment designed to expose the limitations of quantum theory and in which all experiments to validate Einstein's thought experiment--then in the form of Bell's theorem--failed). Similarly an executive passes down an energy field or higher quantum state of information to several managers in which this information now links together different groups of ground-floor workers; and so on. All these quantum-state energies are superposed but correlate precisely throughout the hierarchy when the "company" is functioning perfectly.

We shall come to understand that these energies are holographically and harmonically related and that information, although duplicated throughout the hierarchy, is contained in a higher-dimensional form as we go from D to A. In addition, the probabilities, determining what precisely D receives, increase up the hierarchy. To utilize excessive license in the analogy, we could say that the president communicates the information to create an automobile. This concept contains countless possibilities of arrangements of activities to accomplish this (different car designs, etc.). The executive must create a degree of specificity to be communicated to the manager and, in turn, from C to D, the information is finally 3D specific--only one probability has manifested--one model. As a final point, we must recognize that in reality there are countless levels on a gradient from A to D, from maximum unity to maximum fragmentation.

Let us now compare one bit or one byte (8 bits) of information in man's computers with that of nature's.

3. STORAGE STRUCTURES

Digital computers, as briefly explained, store an electrical charge by application of a voltage, and this charge, along with zero charge, can be used in multiple arrangements of 8 (one byte) to represent a character or any meaning. In the early days of computing, the electronic tube was the basic unit of storage, which was then reduced in size by a thousand times when the core memory was introduced--small rings of metal, magnetized to represent an "on" state or the binary digit one--and more recently has been reduced thousands of times more in the integrated circuit or chip. The process of producing a chip is very complex. Hundreds are fabricated simultaneously from a wafer of silicone using photolithography, involving various sequences of etching, doping, chemical coating, and metal deposition. By this means, superimposed layers etched with templates can be designed to give the properties of transistors, resistors, capacitances, etc., that is, the electronic components of computers. Thus we see that the hardware is solid material and the software an electrical condition of this material.

Now nature's hardware bit is an oscillation. All entities of the "company organization" described above at levels A, B, C and D are all oscillations in reality. If this company organization is working perfectly, all vibrations are harmonically attuned and are holographically related. In reality, all energy is transduced down from A to D; the energy begins at the greatest whole (there may be greater wholes above A of which A is merely a part--any scale size can be considered).

However, what we need to know here is that the hardware bit in nature is an oscillation and is thus represented by the sine wave. Later we shall describe the precise geometry of this fundamental oscillation which in itself is not electromagnetic but scalar (the electromagnetic wave is inherent within the non-vector scalar, and thus loosely all energy might be called electromagnetic, if one wishes).

Now we come to the question as to what is stored? What is the code or system? What does an oscillation, or a modulation of an oscillation, represent? These are formidable questions and will not be fully handled until most of this treatise has been covered. Not only do we have to handle how bits, or quantum (whole individual) states at level D in Figure 1 store information, but how the upper levels relate.

To begin to answer the above questions we have to reject all notions of an intellectual nature--no significances, no associations, no memorizing, etc. Nature is all geometry--at least 4D, and this is sufficient for our purposes, since, by 4D we mean, in particular, that the 4th dimension, time, is space from the 4D viewpoint. This is like saying time at the 3D level is spanned as one whole--one quantum state--except that there is superposition of different degrees of wholeness along time. Thus even time is discrete. For example, if one year is spanned then there is no sense of time within that state, it is <u>all</u> enduring instantaneously as a higher-dimen-

sional wholeness or quantum state.

Let us return to the company organization. Suppose A stores the information "Ford cars"--this might be considered an archetype. This is the basic level motivating the production of specific automobiles. There are countless probabilities regarding what car to produce, but at this level, of many probabilities, boundary conditions do exist governed by Ford's technology, etc. Level B now reduces the probabilities and each executive might be considered to encompass the data embracing one complete model of car, such as a Ford Thunderbird. Similarly, as we go to lower levels there is greater specificity of detail down to a nut and bolt and its precise location. The probabilities are going from maximum generalization within the boundary conditions of the archetype to one specific probability in the third dimension. This is how, for example, a plant or organism grows. The probability reduction is quantum reduction along the gradient 4D to 3D. We shall return to these concepts later with diagrams. The reader is being given a preview of the incredible and perfect mechanisms of nature. Next we shall dwell on the address systems.

To utilize any bit of information we must be able to locate the information, that is, its coordinates must be known or its position relative to a fixed reference. In man's systems this is automatically taken care of by means of the hardware. Just as we have a point relative to X and Y axes which we can locate by knowing the values of the coordinates X and Y at the intersection--see Figure 2--our hardware systems achieve the same result. In fact, the analogy is restricted but we do wish to stress that the coordinate axes system is a method of locating a point.

Nature, however, is infinitely more sophisticated. There are no conductors passing through space to read from or write to locations. There are no axes or limited frames of reference. In fact, if we continue with the comparison between man's and nature's systems, we must begin to modify Figure 2 as in Figure 3. The stored bit must have reference-frame continuity. One cannot have the unreliability of signals travelling from a reference to a location--all kinds of things could go wrong. In Figure 3(a), the bit and the frame of references, which are many, are all adjacent. To develop this further, we see that in Figure 3(b) and (c) the frames are more thoroughly encompassing the location, and finally in Figure 3(d) we have "axes" which are concentric, extending from the point to some boundary (determined by the quantum states). What this means is that whereas in Figure 2 we do not know the location of the bit from anywhere except the axes, not to mention the possible inaccuracies inherent along the intersecting lines, in Figure 3(d) we do know the location from anywhere within the quantum state of wholeness bounded by the outer perimeter. Every single bit we are addressing can be located from any point within the quantum wholeness (which extends up to the whole universe through fractal levels of wholeness--to

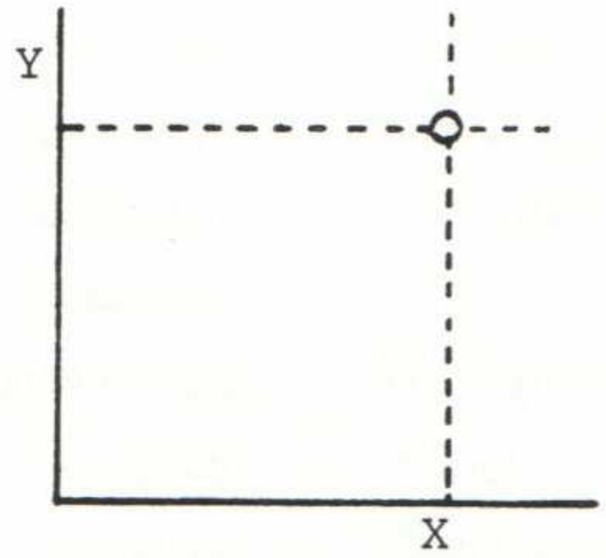


FIGURE 2

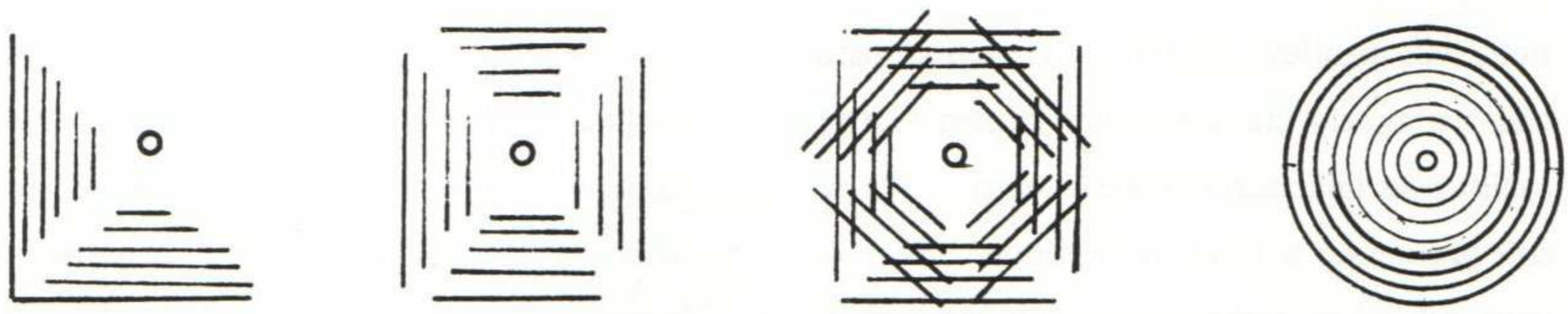


FIGURE 3

be covered later). Imagine the energy approaching the bit from all sides. It cannot go wrong. The approach is actually from 4D since the outer periphery D is 4th dimensional, which enhances its reliability even more. The location of the bit is infinitely secure--which is desirable since nature operates on geometry.

What are these concentric circles in reality? Firstly, as implied above, in this 2-dimensional analogy, they are superposed discs due to intersections of oscillations perpendicular to the paper. This is an intersection occurring at the surface of the paper and coinciding with a node of the vibration--see Figue 4, showing only three superposed oscillations. The next procedure towards a representation closer to reality is to visualize the disc now as superposed solid (energy) spheres. Four-dimensional intersections will manifest spheres in 3D; and all particles are merely the intersection or nodes of 4D oscillations intersecting the 3D matrix. We are still presenting a brief introduction. Next we must ask what is the relationship between the "spheres." The answer is brief and simple: the spiral vortex. A 4D spiral beginning at its outer "surface" spiralling inwards centripetally will duplicate approximately concentric spheres, since the spiral can be infinitely fine--adjacent layers differing by only one quantum (modern science's quantum); see Figure 5. (Picture a drawing of a disc made up of pencil dots touching each other, superposed on another disc, which contains one dot less, and so on down to one dot--the center of the spiral. But these dots (frequencies) are in unison and form one whole, that is, all the discs are, of course, whole.)

We see that we have so far only touched the surface of nature's structures; also nature's systems are beginning to resemble networks rather than the programming with which we are familiar in computer science. In case the reader is becoming anxious, we still have not even glimpsed how natural systems store and utilize useful information--what form does it take, etc.? Our preceding description did not particularly separate the difference, if any, between software and hardware. Let us say a few words about this.

4. SOFTWARE AND HARDWARE

Our digital computers manifest clearly the difference between software and hardware. And there is no geometric relation between the software and hardware. For example, software, consisting of programs of instructions, can be considered to be non-physical patterns. One byte containing 8 bits of "on" and "off" voltages in a particular arrangement has software significance only, because of the pattern, in whatever manner it may be created. The hardware arrangement in spacetime has no meaning. One might envisage fictitiously bending an integrated circuit into some configuration, that is, changing the hardware, and the software remains unaltered. Not only that, but the hardware output, such as a robot arm, is generally displaced from the computer chips, that is, the output is displaced from the immediate hardware storing the

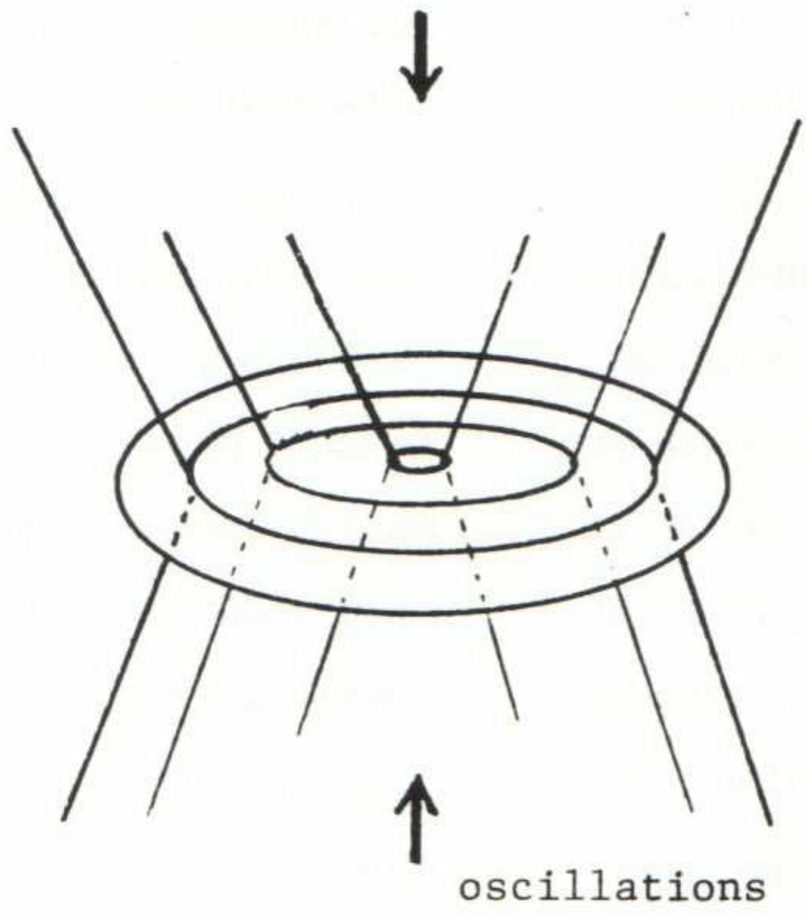


FIGURE 4

FIGURE 5

software.

We are merely stating the obvious. But nature's software and hardware is not distinguishable in this way. Hardware is like solidified software. The basic mechanism in nature is the oscillation and the most fundamental symbol is the sine wave. Everything, life, mind, and the universe and all entities within them can be represented by superposed sine waves as in modern quantum theory. A properly modelled wave function could handle anything, including a complete personality. (Note that this is not necessarily an atheistic or materialistic statement.) The sine wave is the "bottom line" so to speak, and consists of both hardware and software. The carrier wave aspects of the sine function is hardware, regarding the energy, but it is a repetitive potential and therefore has the simplest form of intelligence, which is software.

If we consider more complex modulations on the sine wave, we can imagine more of a separation between the basic sine wave (hardware) and the software elements of information it is carrying. But we also know that these modulations can be analyzed or broken down into other sine waves. Any wave, no matter how complex or irregular, can be created by superposition of appropriate sine waves and phase angles. We can now begin to link up this information regarding the significance of sine waves, which furthermore will give us a relationship with mainstream quantum theory, and with the "concentric circles" and spiral vortex of Figures 3-5. We have already shown that the spiral vortex can be modelled by means of concentric spheres quite accurately. Remember that the spheres (represented by the circles) are nodes of 4D oscillations, that is, each spiral loop is equivalent to a cross-section of a 4D oscillation. We shall attempt to explain this later under hardware. Each sphere can thus be modelled by means of the sine wave (the sine wave is a circle if one considers its repetition in a single unit of space, or is the usual sine shape if we stretch it out in time).

So far we have made some comparison between man's computers and nature's systems. Let us now show the principal differences between modern quantum physics theory and our quantum model.

5. QUANTUM THEORY VERSUS THE NEW QUANTUM MODEL

Quantum physics theory deals with two levels only, 1) the quantum reality, and 2) material reality. Quantum reduction occurs from 1) the quantum state of phase-correlation of energies to 2) material reality of phase-randomization of energies. Note that quantum theory does not recognize the quantum waves as being energy but merely as probability waves; we do, however, propose that the waves are actually energy.

In quantum physics the energies in the quantum reality are holistic and can be superposed to form single wave functions--even for a whole universe. Every element or particle is represented by a different orthogonal such as X,

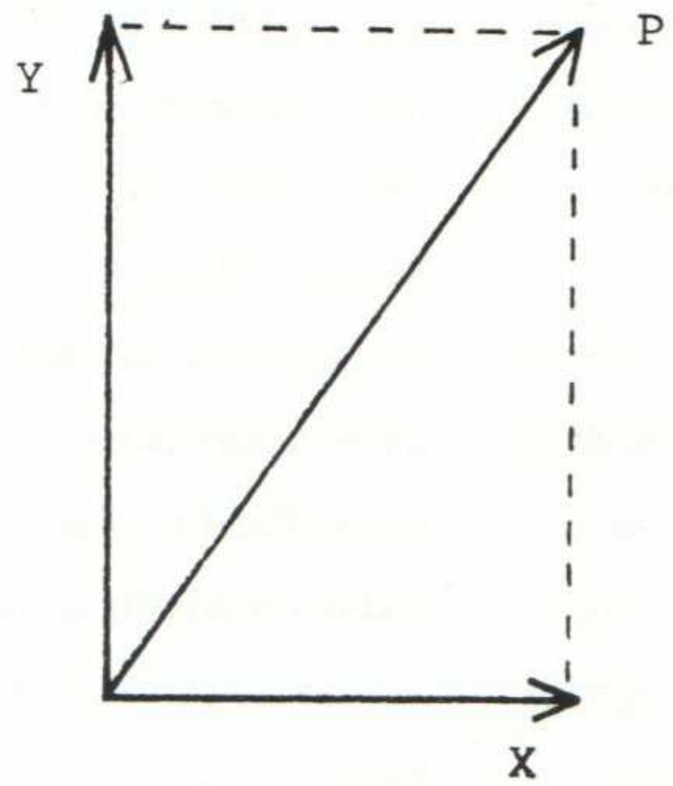


FIGURE 6

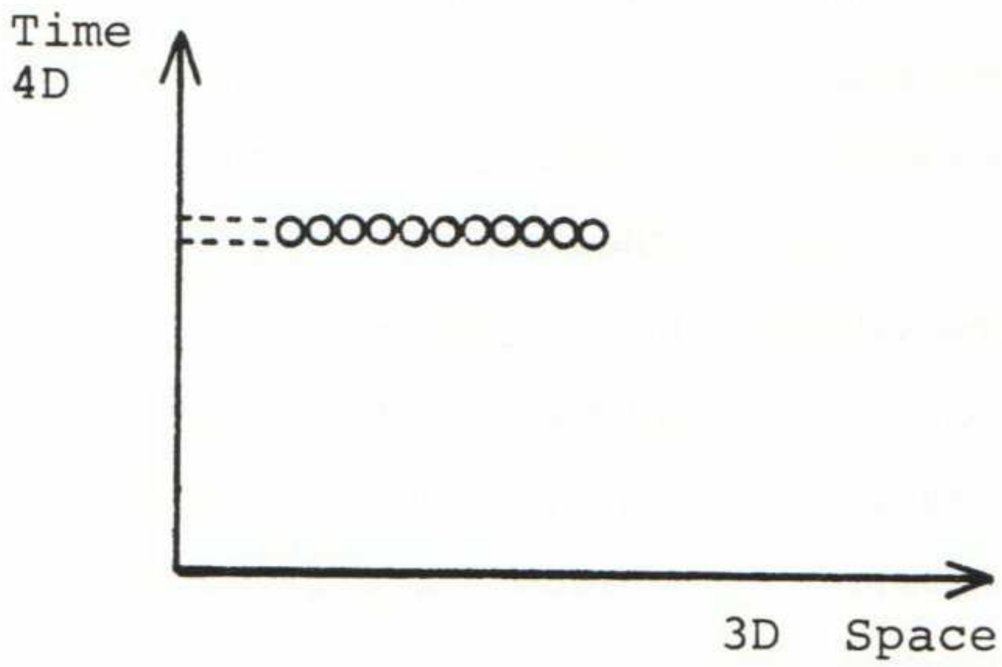


FIGURE 7

Y or Z, etc. Thus countless orthogonals or axes (at right angles to each other) may be necessary to represent a complex state. But in the quantum reality, the values of the states along each axis have a single resolution in the form of a resultant, such as in Figure 6, where Y and X have the resultant P. Countless axes like Y and X all at right angles to each other requiring countless dimensions will similarly have a single resultant. This corresponds to a single wave function; a function which encompasses holistically all the different and separate conditions which we would imagine form the material reality. For example, to represent several electrons, each must be given a separate 3D, that is, three different orthogonals for each electron, but they, nevertheless, can all be represented by a single function; and different probabilities are also represented by different orthogonals.

We may see now why quantum theory's operations are considered mathematical fiction. Utilizing many dimensions, of which we are only familiar with three or four, is unimaginable. It takes a stretch of the imagination to obtain some idea of only the 4th dimension, and a smattering of the 5th and 6th dimensions can be obtained with great effort. Thus to summarize, in quantum physics there are only two levels in the hierarchy, the quantum reality and the material reality, in which quantum reduction occurs from the first to the second. And there are potentially countless mathematical orthogonals.

Our new quantum theory, which we may refer to as the new model, has the opposite emphasis of the two features above (only two levels and yet countless dimensions), turning disadvantage to great advantage. The new model requires only two (whole number) dimensions (the first feature difference), that is, 3D and 4D but utilizes the infinite gradient between 3D and 4D; each point on this gradient or hierarchy such as 3.24D, etc. is a quantum level through which reduction passes, such as from, say, 4D to 3D. This is the second feature, that countless levels are potentially present from the quantum reality of 4D to material reality; the ego level is around 3D.

Note that we shall come to understand that there is no such thing as precisely 3D. The number 3 may have about 33 zeros after the decimal but a figure above zero will inevitably follow otherwise 3D would have no "thickness" in the 4th dimension, of which we find the latter adequately models time. Just as the 2-dimensional surface of a sheet depends on the presence of a thickness along the 3rd dimension of the sheet, our 3D space and objects require a thickness along 4D. This means that a quantum state of energy, which we may picture as a sphere such as a particle (or node of an oscillation--see earlier information on this), will have a 4th-dimensional diameter; the three usual ones in 3D (3 axes) and the 4th-dimensional diameter along time. In Figure 7 we see a row of quanta. An infinitely thin line would represent precisely 3D but as we can see, the quanta have a 4D thick-

ness and thus an object has a minute thickness--around 10^{-33}cm along time. It is not exactly 3D. This is important to understand, and we shall return to it, since accompanying quantum reduction is quantum regeneration--wholes are continuously being restored, and under conditions of regeneration (through resonance) a whole object's 4D thickness can be increased to the order of magnitude of its 3D dimensions such as a diameter (the atoms themselves naturally have a full 4D thickness).[2] This will be explained later.

Let us return to the two features under comparison. In mainstream quantum theory, the space of the quantum reality is sometimes referred to as configuration space. A particle requires 3D to define its dimensions or wave function, as in ordinary space, but if another particle is included simultaneously, this particle also requires separate three dimensions, making six altogether in configuration space. The two particles are now represented by a configuration of six dimensions, which is singular. A single wave function describes the two particles, which are quite separate in the real world. The quantum system of two particles can be considered to be holistic. Even the possible behaviors of a particle such as, say, either going in one direction or in another direction can be represented by a single wave function. These different directions may represent the probabilities of the paths of the particle. Each possibility, of which there may be an infinite number, is represented by a vector, in vector configuration space, and each of these vectors are perpendicular to each other--they are always orthogonal. Even many separate particles may be treated in the same manner--as though they were one whole in the quantum reality. We see that to express the probable behavior or states of an object we may require countless higher dimensions. This is one of the reasons the quantum reality is considered fictitious--we can only visualize three axes, X, Y and Z, or three dimensions. However, all these paths represented by vectors have a resultant and thus a single quantum wave function represents all these probable paths. Nevertheless, we know that in reality--in three dimensions--only one path can manifest in any one time interval and, in general, lie closest to one of the orthogonals. Thus the process of observation (or measurement, etc.) is considered to collapse the resultant vector onto the nearest orthogonal or real world state, manifesting that particular probable behavior or state.

Now in our quantum model, we only need three ordinary axes at right angles to express 3D, and one time dimension (the 4th dimension), which from a 4th-dimensional viewpoint is experienced as a 4th spatial dimension. That is, in general, we only need four dimensions. Between 3D space and 4D space is a gradient or hierarchy of increasing degrees of correlation of energies or frequencies. The 4th dimension experienced as space, means full phase-correlation of energies, represented by a single wave function--see Figure 8. We see that the individual energies (particles or probable

behaviors) at the 3D level are connected up gradually to one whole at the 4D level. But as shown in Figure 8(b) each particle is individually under the control of the one whole (the perimeter), which is the vortex mentioned earlier. The vortex centripetally spirals inwards to any subpart (sub-vortex) within itself, from a spherical 4D spinning condition, spiralling inwards, and quantum reducing, to a specific single 3D condition, except that there can be countless separate 3D conditions or particles within its span. This type of configuration applies from the microscopic to the macroscopic.

In Figure 8(b), the outer circle, or the commencement of the spiral, can represent the quantum state for the whole universe. As it spirals in, it branches into sub-vortices which could be superclusters of galaxies, then clusters, then galaxies, spiralling in and forming solar systems, planets, etc., down to atoms. The whole universe has instant connection with any of the particles within it, which, as shown by Figure 8(a), are cross-referenced by different degrees at different levels of the gradient or hierarchy. Transmission of information is instant because the whole system is holistic through the hierarchy.

This same configuration shows how the geometry of a growing plant develops; how a tree manifests the different fractal levels of branches from large to small (twigs), etc. and, in general, how a living organism takes its shape, to how the mind learns, particularly in physical coordination. However, we are digressing. Let us return to Figure 8 and see how quantum reduction occurs. All this information forms the basis of nature's hardware/software systems. Information is stored throughout the gradient from 3D to 4D. The information is configured in increasing degrees of wholeness towards 4D. But as the wholeness (4D thickness) increases, the probabilities increase.

6. QUANTUM REDUCTION

In orthodox quantum theory, reduction takes place from the quantum reality of fictional configuration space to material reality. Observation appears to be the catalyst which enables the many-probable quantum states to reduce suddenly to one probability--the event in our 3D environment. As stated earlier, it is a two-step process, whereas in the new model there are potentially countless steps in which greater wholes are reduced (quantum "collapse") to lesser wholes (and vice versa for quantum regeneration; to be discussed later).

In Figure 9 we have the vortex in which energy spirals inwards, traversing every point towards the center, except that we have simplified it to four concentric circles or levels of the hierarchy between A (4D) and D (3D). Each level has a corresponding wave function. At D it is simple and could be a mere pulse as shown in (b). As we jump many levels to C, the wave function has many more probabilities. But note that they are not probable at level C--they exist as such simultaneously with complete meaning. Thus going in the opposite direction from A to

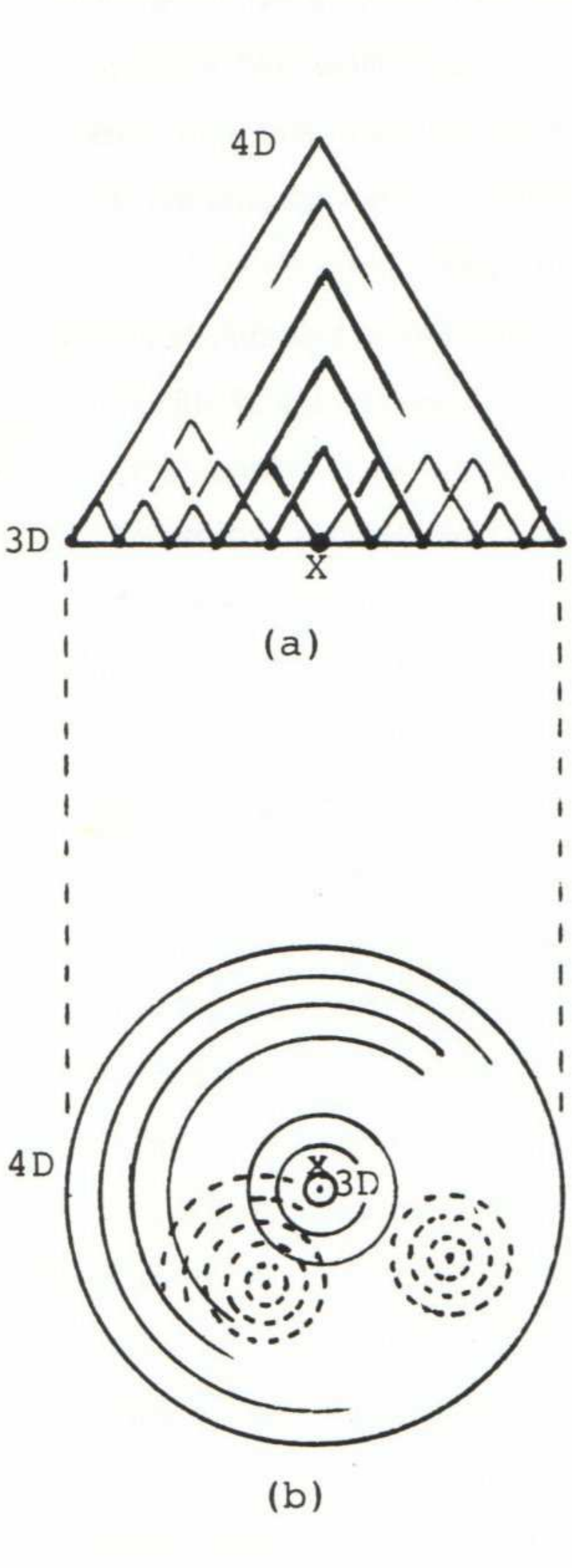


FIGURE 8

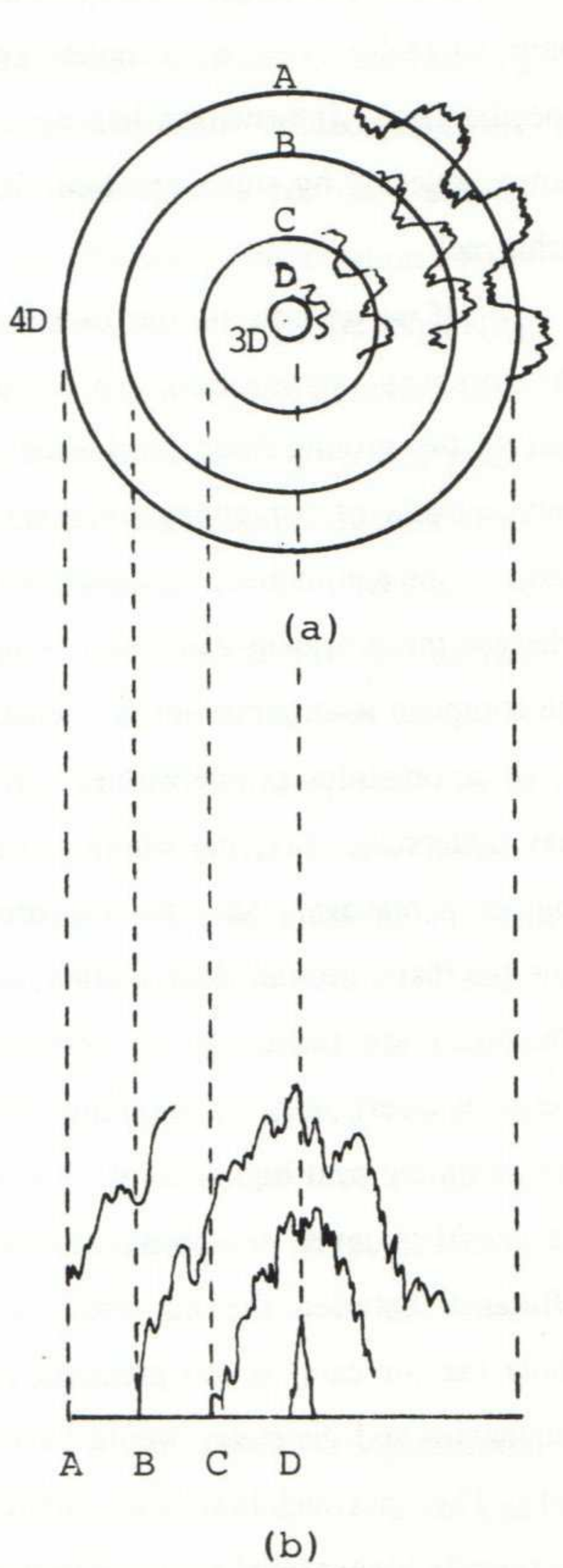


FIGURE 9

D, we see that a complex wave function at A, representing maximum generalization "homes in" by reducing probabilities--increasing specificity--until at D a single probability manifests in physical reality, that is, complete singular 3D specification. Information has been narrowed down, selected by some process. How is this achieved?

If we wish to use our earlier analogy of the company organization, we could consider that at the ground-floor level each worker is only capable of perceiving or grasping single items of the automobile, such as a nut and bolt, whereas the president can grasp as one whole, the complete automobile--or if one can imagine it, all automobiles as one whole. An executive may understand, say, the whole concept of the engine; a manager, say, the carburetor. We now see that a ground-floor worker, in order to precipitate the reality of the automobile (the president level), must impinge his own singular energy on the next higher level. To impinge at the president level, would have no effect; the difference between the nut and bolt and the whole car (or cars) is too great (in reality the frequencies and geometry would be incompatible). The "nut and bolt" must impinge on a fractionally higher level--preferably much lower than the manager (carburetor) level, such as a piece which has the appropriate whole in it for the bolt. The two levels are so similar there is "resonance." The man at D can only grasp the next slightly higher level. In reality, the waves at D impinge on the waves at C (imagine as slightly higher in the gradient) causing C to release its other inherent waves corresponding to the D level. This is like the analysis of a composite Fourier wave form which is broken down into its single sine waves. Note that it means the starting point of the "nut and bolt" has already partly determined what automobile the president will "pass down."

We can begin to obtain a glimmer of the process of programming and storage of information. A program means that a product has already been preset. The president will receive information which will cause him to release the appropriate design from many probabilities or (since this is a fictitious analogy and oversimplified) he has had selected from him, say, three or four possibilities of car design. Each level selects, by similarity (resonance) from the next level above, the matching item according to the program. There are thus patterns of bits of information in nature which range from separate elements (at D) through increasing degrees of wholeness or quantum states towards A--each wholeness is whole in its own right. For example, a cell has a whole oscillation quite apart from the molecules which appear to form it. It would have a complex wave function which inherently contains all the waves of the molecules within it. The cell's oscillation is a little higher dimensional; it extends into a 4th-dimensional direction by an amount equal to its 3D diameter (as with the quantum described earlier). Information is travelling both ways--from the lower levels to the higher levels, selecting

probabilities, and simultaneously from the high to the low; the archetype controls the big picture but the 3D element determines the next detail. Thus the mystery, in psychology and philosophy, of whether existence is due to the "top-down" or "bottom-up" phenomenon is answered by recognizing both simultaneously as correct.

Quantum reality according to our model goes from a higher-dimensional whole generalization to complete specificity in 3D, on a gradient from 4D to 3D. We have thus already had a glimpse of nature's systems for retrieval of information. Let us say a little more about this.

7. NATURE'S RETRIEVAL MECHANISMS

A computer must have a means of reading the data it has stored. All nature's computerized processes involve resonance. Communication of a signal occurs by continuous resonance from one point to another. We have already seen that every point in spacetime is a reference for every other point. Signals do not travel across linear space--except as an illusion. Behind the linear phenomena is a nonlinear one involving resonance from point to point. To exemplify this retrieval in nature's processes, we must consider setting up a condition which is purposive. One cannot idly, linearly, select data, without the presence of an overall "idea." That idea might appear to be at the 3D level only, but in truth it has depth and extends up the hierarchy. For example, one forms the idea of initiating a learned complex sequence of physical movements (such as in playing a musical instrument). A finger may be given precise conditions of location, speed, tension, etc.; it is part of the idea, the overall structure of the learning pattern, which has holistically-related data (when learned). An instantaneous resonant activity occurs as the specific finger information travels "up" the hierarchy (outwards in the expanding concentric rings--see appropriate figures), meets the idea or archetype coming "down" the gradient, and is subject to continuous selection of its probabilities by the level below. Every minute level plays its part--it selects the appropriate information from the level above which is fractionally different and whose probability is slightly more "fuzzy." The higher holistic programs or wave functions must be broken down into separate pulses at the 3D level. Again, the lower level causes the higher level to respond according to the lower level but at the same time the higher level provides a fraction more information (in relation to all levels above, up to the archetype), indicating to the lower level where to go next.

Let us take the company organization example again. At D we have, say, a nut and bolt. If there were no levels C, B (or countless others missing in reality) between D and A, there is no way the nut and bolt at D could communicate with the "Ford cars" at B. But fractionally above D, the bolt fits precisely into a certain size hole, which is part of a piece of a certain shape. One can see that very gradually

the specific car is selected from "Ford cars"--the conditions all the way up the hierarchy determine the outcome. The process is holistic. It cannot be understood by examining parts only. Holistic mechanisms are extremely difficult to understand by the ego intellect--this is why they have not been properly evaluated. Nature's computer-network systems work on quantum and holistic principles.

Every point of energy is necessary for the proper functioning of every other point--blockages will cause phenomena corresponding to true chaos. Compare this with the conductor, say, a wire, in a linear computer; it can be bent this way and that, or a section removed, and reconnected; it need not affect the functioning of the computer at all. Of course, nature's systems are enormously "redundant." Countless tiny flaws of the kind mentioned above, may not be detectable in the overall output. But note that chaos occurs in creativity; it is simply a tiny amount of out-of-phase conditions giving rise to a quantum leap in the system too small to be a problem. Let us briefly discuss this important subject of chaos.

8. CHAOS

One of the established considerations of early science was that the universe was potentially deterministic, which means with sufficient data and accuracy of measurement anything is predictable. Ignorance was only based on insufficient information--this was known as Classical ignorance. But then came along quantum ignorance; that the precise behavior of the micro-world cannot be known no matter how much information we gather, based on the uncertainty principle. However, even in quantum theory, a statistical evaluation will give us a deterministic situation which corresponds to that in Classical mechanics. At least this determinism was thought to exist; but then "chaos" was discovered.[3]

The randomness in chaos is fundamental --gathering more information does not generate determinism. Small uncertainties are amplified and predictability decreases. Nevertheless, contrary to this, there is order in the geometric patterns created by chaos.

The study of chaos, then, such as in a turbulent flow of fluid, on the one hand, leads us to an understanding of new limits imposed on predictability but, on the other, shows that many random phenomena are more predictable than previously thought--such as fractals (for example, pebbles thrown on the ground possess an order obeying a law which imposes random patterns of different scale sizes superposed). This is briefly the situation as accepted in mainstream science. Let us now consider the analogy again, utilizing the company organization.

An executive controls a number of known managers, and in turn a manager controls a number of specific ground-floor workers. To represent chaos, such as the turbulence of a flow of water, swirling smoke, a dripping faucet, etc., or any activity due to critically excessive force or speed in disturbing the natural system,

we can imagine the ground-floor workers at D, in Figure 1, working under so much pressure, say, even panicking, that they are dashing around, such that the mangers have lost track of which members belong to which department. This causes further chaos at level D, owing to orders being received by wrong people. Amplification of errors occurs.

We can see that whole states (of control) will jump around (which is a known feature of chaos); say, half-a-dozen workers one second will be operating with a certain degree of coherence then in the next, another group, overlapping with the former, will be acting with some degree of unison under the same orders or influence. The fluctuating patterns are not predictable.

Now the state prior to chaos may still be one of randomness; that is, the state prior to the critical value of increasing randomness which begins the onset of chaos. We can still represent this by the hurried motions of the workers at D, but the manager, executive, etc. do not lose track of them--they can be fully accounted for at the higher levels. Note that this has not been established scientifically; that paths of every particle in this random behavior--below chaos--can be known at higher orders. But in chaos, the higher orders are no longer in resonance with the lower orders.

We may see how chaos relates to creativity. Creativity must involve unpredictability --otherwise it is not creative. Chaos also has attributes of unpredictability but manifests geometric organization and fractals within the unpredictability. Another creative aspect which manifests chaos is learning. A cognitive structure, which can be a learning pattern (all of which are holistic), does not add to itself tiny factors to expand its territory of information and understanding; it takes quantum leaps from one whole state to another, even though these jumps may be very small.

9. HOLISTIC AND QUANTUM SYSTEMS

As far as we are concerned, these terms, holistic and quantum, are virtually synonymous. A quantum is an undivided whole such as one whole oscillation, represented by a single sine wave. Thus the quantum attribute expresses the wholeness level of the entity. A holistic state is one which may contain parts but these parts are correlated such that the total entity is a quantum (whole) state. Nature is continuously regenerating parts into wholes by correlating the frequencies of the parts, such as, for example, in the process of learning; stimulus-response associated elements (parts) can suddenly correlate into (whole) cognitive structures, and evolution itself correlates and transforms elementary structures into greater integrations.

Something becomes whole when the parts are in perfect agreement. Our analogous company organization is holistic--all the parts are working in unison on a particular product. In nature it is the frequencies which must correlate. The president has all the information of every one below him but he has this stored

higher dimensionally. It is of no use practically at the ground-floor level. All the levels in the hierarchy are necessary. For example, as we shall exemplify again later, a learning (habit) pattern for the execution of coordinated movements is similarly hierarchically holistic. The president level corresponds to the idea of making the coordinated movement. The idea does have an energy which represents it but it is useless in itself to achieve the physical movement. In actual fact, what would happen if only this overall idea existed is that the complete movement, that is, every step making up the movement which must take time to execute, will attempt to occur all at once, simply causing a seizing-up effect.

Thus the ideation of the movement must communicate through a system of decreasing "ideas," that is, through a break-down of wholes into sub-wholes, into parts, etc., down to one bit of information. Now we can see how the movement can be achieved. The learning pattern is a structure identical to those explained earlier, such as in Figure 8--all the frequencies of the parts and greater parts to one whole, are in coherence. A laser beam, owing to the coherence of the individual waves of light, contains a regenerated component--a single 4D oscillation of higher frequency than the frequencies of the light waves, which are now subharmonics of the greater whole or quantum state. A laser is an example in which the parts (the light waves) came first, but natural living phenomena operate in reverse, the wholes come first in the form of blueprints or achetypes and then guide the growth at the substructure level. But as indicated earlier, the lower level has the power to select. This means man can change his blueprints and archetypes, which indeed he has done; many properties and behaviors are erroneously considered natural.

Why does the energy spiral? Note that it is not a new idea. Many fields within science, as well as philosophy, ancient religion, and numerous brilliant investigators have recognized the intrinsic properties of the spiral. The outstanding work of Victor Schauberger revealed his unique understanding of the centripetal nature of the universe. Not only was he an expert in agricultural and forestry matters, but he developed the first antigravity flying saucer-type propulsion based on the centripetal energy for the Germans at the end of WWII (under threat of death), which later became the Russian cosmospheres, now wielding awesome power (of the secret government).[4]

Renowned philosopher and mathematician Charles Hinton, around 1900, an expert on the 4th dimension, recognized that 4th-dimensional rotating spheres could be in group contact and yet support each other's motion (not the case in 2D and 3D). We know that water from a basin flows through a narrow drain spirally--clearly a natural and more efficient path. Energy at the 4D level has greater electrical pressure and takes on a spiral as it quantum reduces into 3D covering every interstice of geometry (we cannot say space since it creates space). This is

the basis of gravity which we do not have the space to elaborate on.

The centripetal spiral is thus a natural flow for the energy to take as it transforms and quantum reduces through the gradient 4D to 3D. We might add that it builds up pressure or charge in 3D due to the lag and hysteresis of 3D space (formed of out-of-phase "points" of energy). Like a charged condenser it then discharges into 3D space--this is the degeneration cycle and centrifugal action as expounded in Walter Russell's theories. However, we say that there must be an opposite centripetal for the perfect design--supersymmetry, etc.

10. THE VORTEX MODEL

We have now covered fairly generally much of the basic information on nature's systems, and can proceed with a little more specific and detailed description. In our new quantum model, information is stored in the outer perimeter of vortices which then spiral centripetally towards the center, and where necessary branch off into fractal levels or subvortices. No matter how complex such a configuration, it could be represented by a single wave function. All these vortices have the same form except that greater wholes, such as the universe vortex, will not spiral into small regions forming particles in one operation but will branch off into galaxies, etc. The information in the outer perimeter, consists of "sine waves" of different dimensions and phase-angles in relation to one another, which spiral inwards, quantum reducing to their appropriate projections in 3D and are related, that is, positioned relative to one another, by the phase angle.

The basic energy unit, then, is the vortex, whatever its degree of wholeness or subwholeness. Our model shows that this unit is the basis of all entities: particles, atoms, cells, planets--all true wholeness--up to the universe, etc. The energy unit is essentially 4th dimensional and cannot be visualized with the 3D ego intellect, but it can be imagined with considerable effort and practice. The waves emanating from such a unit are scalar in nature, that is, the electric and magnetic components are not exposed but are within a greater whole.

In endeavoring to build up the picture of such a configuration we may use a single analogy, and one which is lower dimensional. Consider a sheet of thin rubber material stretched taught. This is approximately a 2D surface, and perpendicular to this surface we have the 3rd-dimensional direction--on both sides of the sheet. To represent scalar waves or the oscillations of the basic energy unit, imagine plucking the rubber and releasing it such that it oscillates along this 3rd dimension--if the sheet is horizontal the oscillations are motions up and down. This is a simplified model for 4D oscillations which intersect our 3D space. In fact, all we detect is the node regions of the oscillation--which, note, the analogy does not satisfactorily demonstrate. Figure 10 shows the 2-dimensional analogy. All 3D entities are of this nature. In Figure 11 we reveal the finite size which will

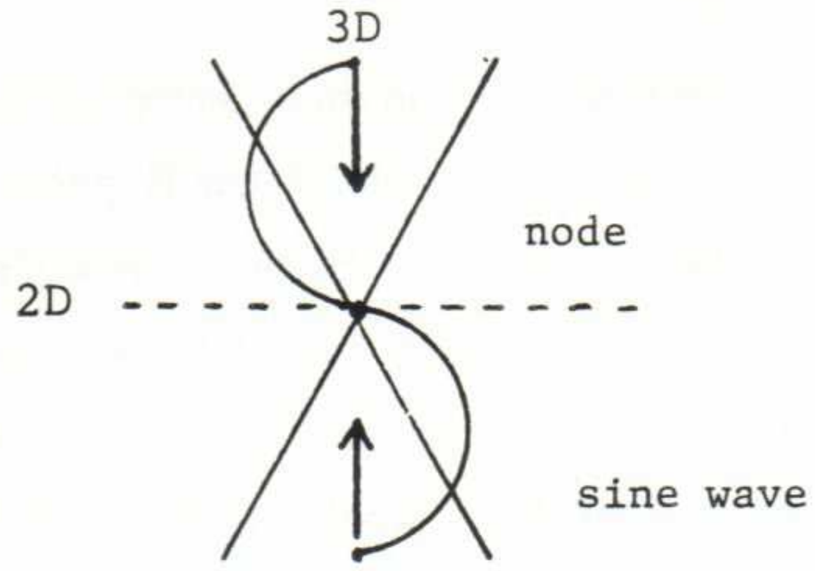


FIGURE 10

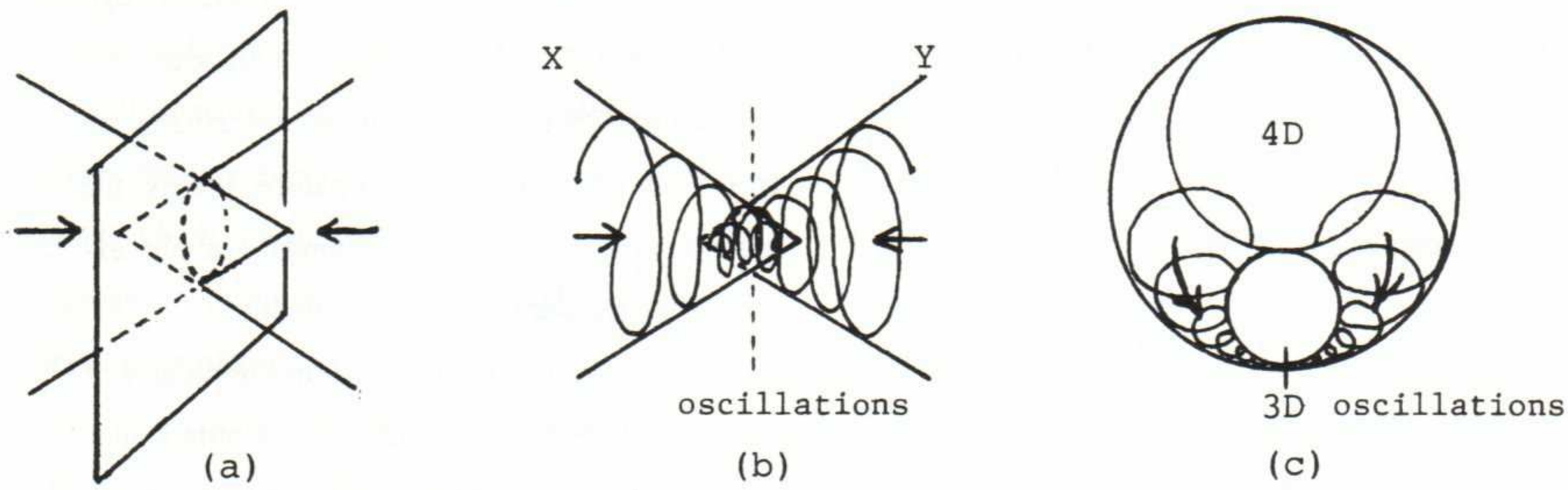


FIGURE 11

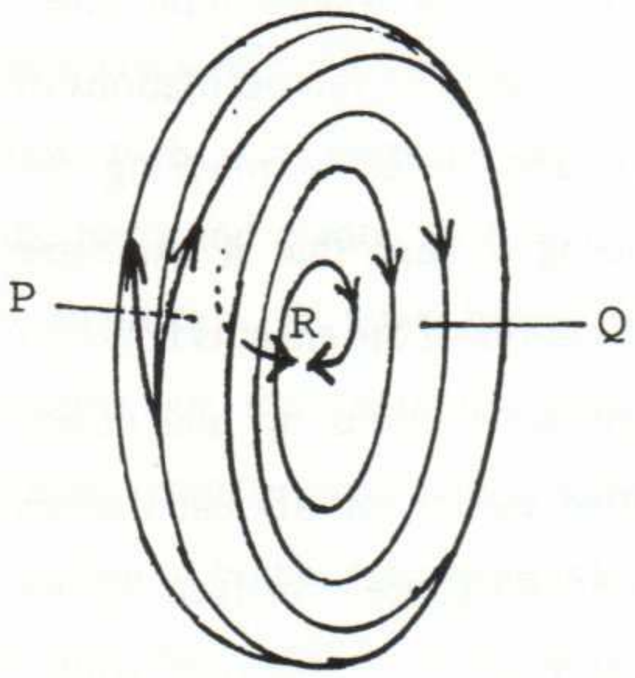


FIGURE 12

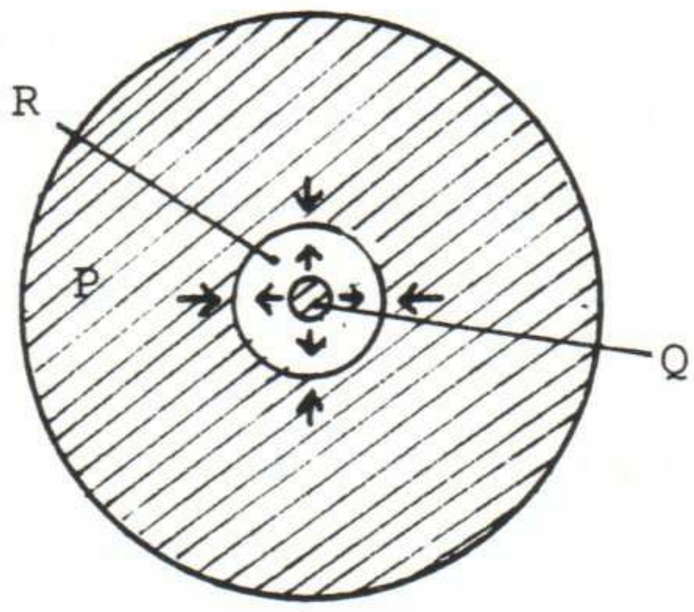


FIGURE 13

appear roughly in 3D. The dotted circle represents the apparent spherical effect which will be evident in 3D. Unfortunately, lower-dimensional analogies are very limited and in this case the perfect symmetry of the true energy unit is not demonstrated.

We see the well-known double helix configuration in Figure 11(b). However, the locations X and Y in the diagram are the same (as one another) in the true 4D to 3D version, and we must modify our figure to look like that in Figure 12. It is a 3D toroid with the centripetal spiral on either side, meeting in the center or in the doughnut hole. This 3D toroid must now be translated into a 4D toroid or doughnut for supersymmetry. Figure 13 is a very approximate representation of this. The region R is shell-like and "hollow," which is the "doughnut" hole, but in the center we have to show a small sphere, Q. If one were viewing this 4D-wise, the center piece would be symmetrical with the solid shell region P. That is, inside the center, along a 4D direction, is an identical mirror-image shell--simply turned inside out with respect to the one we see. Regions P and Q coincide 4th dimensionally, just as they do in Figure 12. We can only view one side at a time, with the other somewhere in the center. (Note that the "hole" in the doughnut is merely where the energy meets and oscillates.) This is the mystery behind the strange reflection properties in particle physics; the Mobeius strip and Klein bottle phenomena; electron orientation problems (it must be turned around 2x360 degrees to return to its original orientation); Dirac's negative electron shells and antimatter; and, in general, the anti-universe concept. If we could move our consciousness along a radius towards the center of an atom, as we passed into the center but curved along a 4D direction and turned to look back, the atom would appear to flip over; the center region now becoming the outer region towards the periphery. It would appear to be two atoms back to back, just as a coin has two sides to it but 2D beings can only be aware of one side or the other, and not the unity of both sides. This energy configuration also is the structural unit of the ego mind, but there is not the space to deal with this here.[5]

Figure 14 shows an integrated vortex structure revealing a natural fractal geometry. This could be a universe (A) with Galaxies (B), stars (C), planets (D), etc.--compare company organization--at the fractal levels as it spirals inwards. Note that this spiral diagram, as with similar previous ones, does not show the opposite pole, or spiral--we are only diagramming one half of the oscillation or double helix. Figure 14 could represent any other complex structure of life, mind and the universe: tree trunk (A), large branches (B), smaller branches (C), twigs (D) (usually are actually about seven fractal levels); physical coordination/learning patterns for whole arm (upper) (A), lower arm (B), wrist (C), fingers (D). Note that the relationship between the levels is always nonlinear. The programming of coordination at the whole arm (shoulder) level always contains all the

information of the lower arm, wrist, finger, etc. but in a higher-dimensional form. The higher level can always quantum reduce its information to the lower level--this is also the basis of teleportation or making an object disappear and re-appear.

What is the "computer" bit then? It is A, B, C, D, etc. They are inside one another 4th dimensionally. This is the basis of the concept "context"--one of the most important terms in the understanding of all fundamental phenomena: the mind, quantum fields, artificial intelligence, etc. A computer scientist, engaged in unravelling the difficulties involved in artificial intelligence, in particular, the simulation of human behavior, once asked an eminent mathematician, Ullam, what he considered was the secret of artificial intelligence--what was the key to simulation of life. The mathematician apparently replied, "context," and then, as the story goes, he walked away.

All our quantum fields described by means of the spirals or "circles within circles" are systems based on the principle of context. Each higher-dimensional field is the context within which the lower one operates (each is a reference for the other). Whole books could be written on the concept "context." Information in nature is pyramidally or holographically contextual. Each single specific (3D) bit of information is "inside" a fractionally larger bit (the next bigger "circle" or quantum field oscillation) which would be a little fuzzy for the 3rd dimension since it has slightly greater 4th-dimensional thickness. And similarly this second bit is inside another, and so on up to and branching off into greater wholes (at fractal levels). Imagine the bit in your personal computer being the terminus (specific 3D single probability) of a whole series of expanding bits extending up to one whole from which all the other bits came. See Figure 15(a) or the more complete diagram in Figure 15(b) (opposite spirals (poles) not shown), but with fractal levels.

Although there is not the space to go into the physics of the ego structure (the single most important subject) we will briefly mention here that the ego keeps itself "positive" (even in the most destructive and negative way) by blocking off higher contexts. Decisions can thus be made by reducing the amount of data (reducing the awareness). This is also the basis of scientific progress. Theories are based on limited contexts otherwise no one would have sufficient intelligence to evaluate a "final theory" out of context with the initial studies. However, scientists must let go of old contexts for new (this would also expand awareness out of the ego range); unfortunately the ego hangs onto limited systems as being basic to the new (when it is the other way round), preventing knowledge from expanding into higher orders--greater contexts and integrations. (Einstein's general relativity fails partly to the degree he--seemingly in an obligatory manner--hung onto Newtonian principles; for example, there is no principle of equivalence--gravity and inertia are dimensionally incompatible. A higher-order

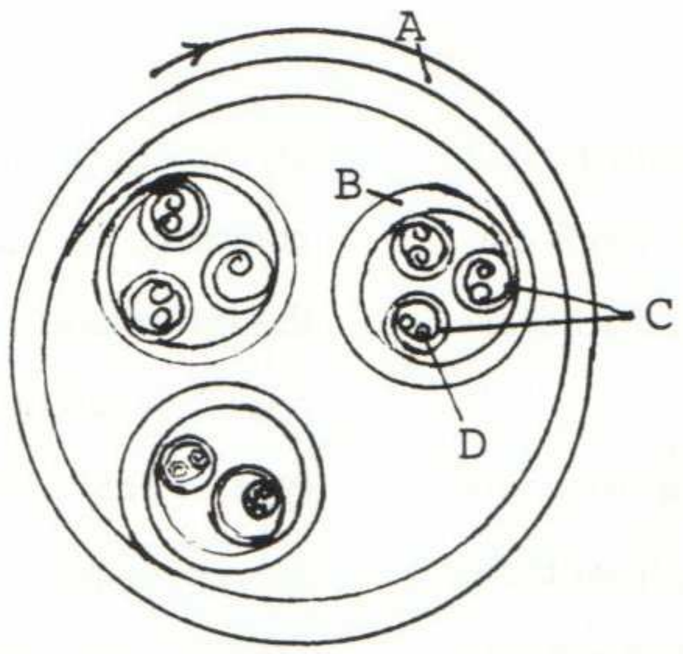
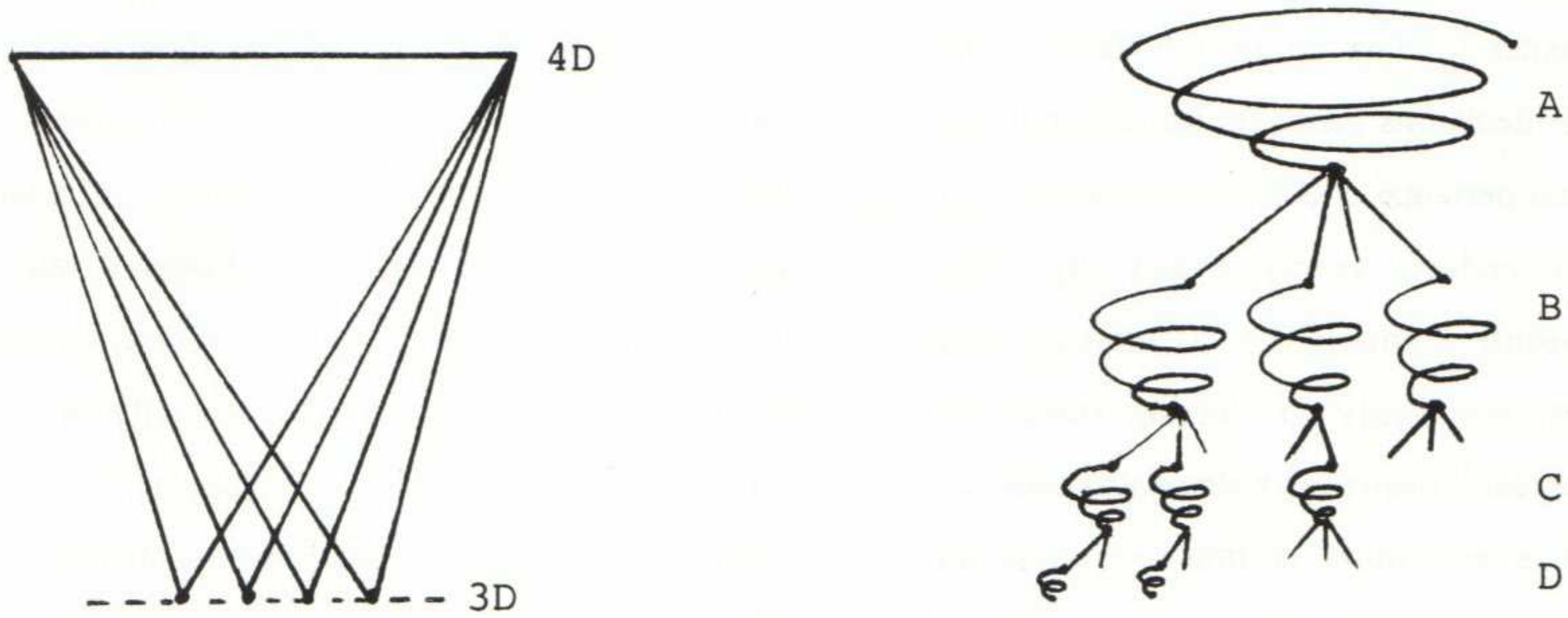


FIGURE 14



(a) (b)

FIGURE 15

science, touched on by Einstein's geometric 4D gravity interpretation and no-force condition, would by-pass force and inertia with the development of a parallel technology.)[6]

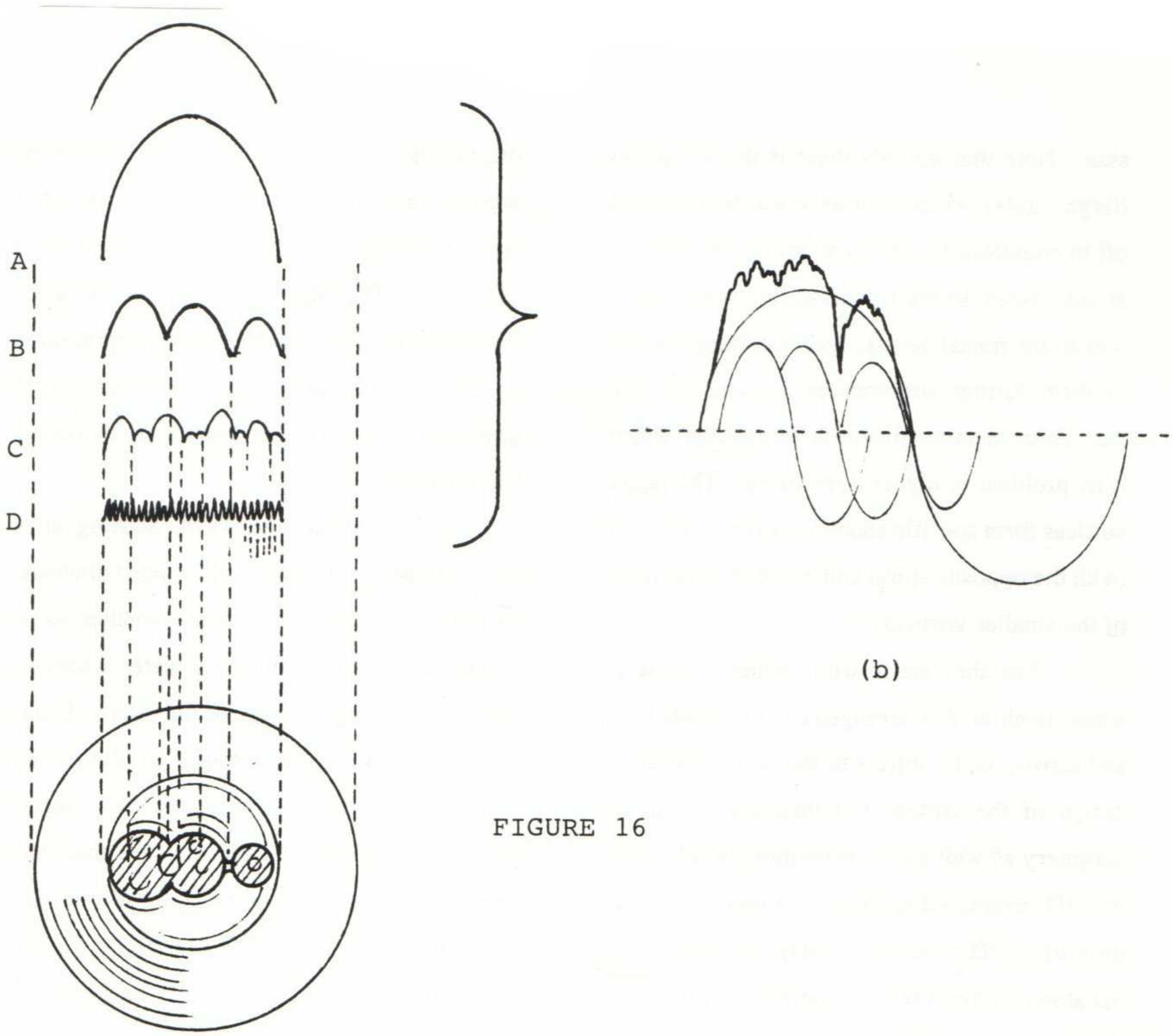
The ego is structured from the two poles--the double helix poles coming from their greater 4D wholeness. This part of the mind, which incorporates the lower spectrum of the hierarchical energies, thinks always in terms of dichotomies, such as good-bad, this-that, etc. (Psychologists have shown that children and even animals "think" in terms of gradients rather than opposites.) The result (of dichotomous thinking) is decisions based on limited and false contexts and personal unconscious contexts with consequent endless conflicts and arguments between people. This is the "assumption" that one makes mistakenly or "taking things for granted" (a really destructive element in relationships). The ego mind is thus notorious for blocking off the mind's contextual thinking of which this contextual awareness is its strength; the incredible hardware/software systems described in this work--it means man's consciousness is capable of expanding to the one whole.

11. STORAGE OF INFORMATION

Let us give some examples of how information is stored and utilized. A plant's DNA will directly connect up to the archetype or blueprint for that species of plant (it will be collective at some level of the hierarchy). The DNA strands do not just contain separate pieces of information side by side, but information is layered or grouped just as with the pyramidal company organization described earlier. Thus the information at the 3D DNA level will extend back (inwards/upwards) to the one whole archetype. The archetype specifically defines that species of plant but contains many probabilities regarding the actual form it will take as it grows in 3D, governed by boundary conditions (allowing, for example, a range in the thickness of the stalk, and number of leaves, etc.).[7]

The plant grows creatively within the boundary conditions. The DNA at the 3D level sends, continuously, information about the 3D status of the plant at any instant to the archetype, and adjustments and selections are made along the gradient of superposed quantum fields. Probabilities are selected all the way down this 4D to 3D gradient to final specificity at the material 3D level. The archetype is a wave function which controls the position of the new cells as the organism grows, according to the DNA information at the 3D level, but within the boundary conditions of the blueprint or wave function. This would apply to all growing organisms.

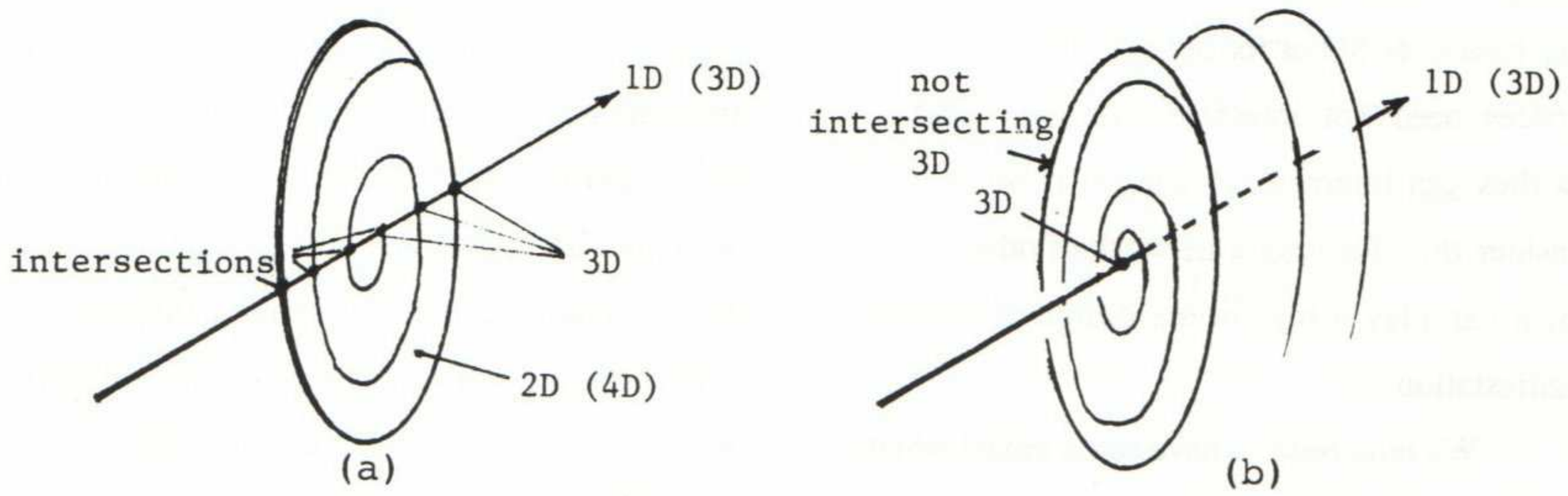
Figure 16 gives an oversimplification of the wave function representation in lower-dimensional form from one angle of the simple form of an organism such as an insect (or whatever). In Figure 16(a) we see the components of the wave function separated out. Figure 16(b) gives the composite effect. Remember that every circle (in Figure 16(a), lower diagram) is equivalent to an oscillation intersecting the 3rd dimen



(a)

(b)

FIGURE 16



(a) (b)

FIGURE 17

sion. Note that initially there is the 4D vortex (large circle) which spirals inwards branching off in countless directions within itself, stopping at sub-vortex levels (moderately large circles), which are fractal levels, and spiralling inwards to form further sub-vortices (smaller circles), etc. There is unimaginable superposition, which is no problem in higher dimensions. The larger vortices form specific standing-wave oscillations (with the opposite spiral and guide the placement of the smaller vortices).

For the reader who wishes to look in some depth at this arrangement of dimensions, and subsequently objects to the lack of nicety in design of the vortex if it intersects 3D at its periphery as well as its quantum-reduced center into 3D, examine Figure 17. We see that in (a) the vortex (2D representing 4D) is intersected by 3D along its diameter. But in (b) all we have to do is turn the plane of the spiral (4D) through 90 degrees into the 5th dimension and the vortex only intersects 3D at its center. Thus countless vortices need not interfere with one another. But they can intersect, of course, if we wish to consider this, forming a network of other nodes which can play a role in the design of the grid manifestation.

We now need to have some model which shows how any point within the primal vortex can be addressed--such as in locating precisely the position for a cell to grow. Figure 18 attempts to demonstrate how a point X is reached from the periphery of the vortex. Remember that the periphery is 4D and our diagram is 2D and is merely a model representing an infinitely more complex network of waves rotating around the outer periphery of the 4D vortex. The sine waves in Figure 18 are on the outer circle and the sine waves represent the spiral "circles" concentrically winding into the center (picture them as so close as to be concentric circles).

The largest sine wave, starting at A, corresponds to the circle of greatest diameter, but in the diagram it is much smaller as we cannot draw a wave on a perimeter which has the same 360 degrees scale at the circle. Diminishing sine waves correspond to diminishing circles of the spiral. If one follows the diagram carefully, in Figure 18 one can see that those precise phase angles of the sine waves--note points C, D, E, etc,--cause the spiral, which is precipitated or quantum reduced from the "program" on the periphery of the vortex, to home in on point X. That is, the location of any point inside the vortex can be predetermined by programming the phase angles of the sine waves on the periphery. In order to vary the position along the horizontal line F to C, sine waves will be staggered at 270 degrees but the displacement will not be on every consecutive wave--the more waves out of phase at 270 degrees the further along F to C the terminus of the vortex will be. To locate points from the center to the bottom, b, the waves must be out of phase at 180 degrees, etc. The cyclic energy of the periphery is timeless--time comes into existence gradually down the gradient spiral. This is a speculative

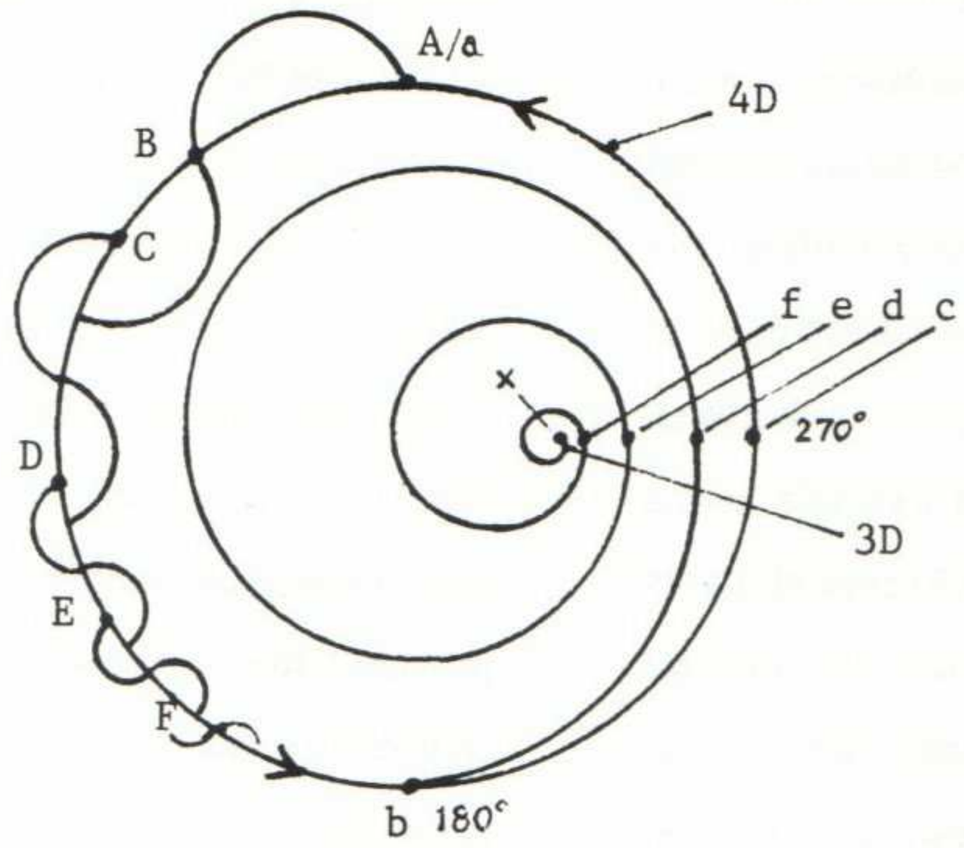


FIGURE 18

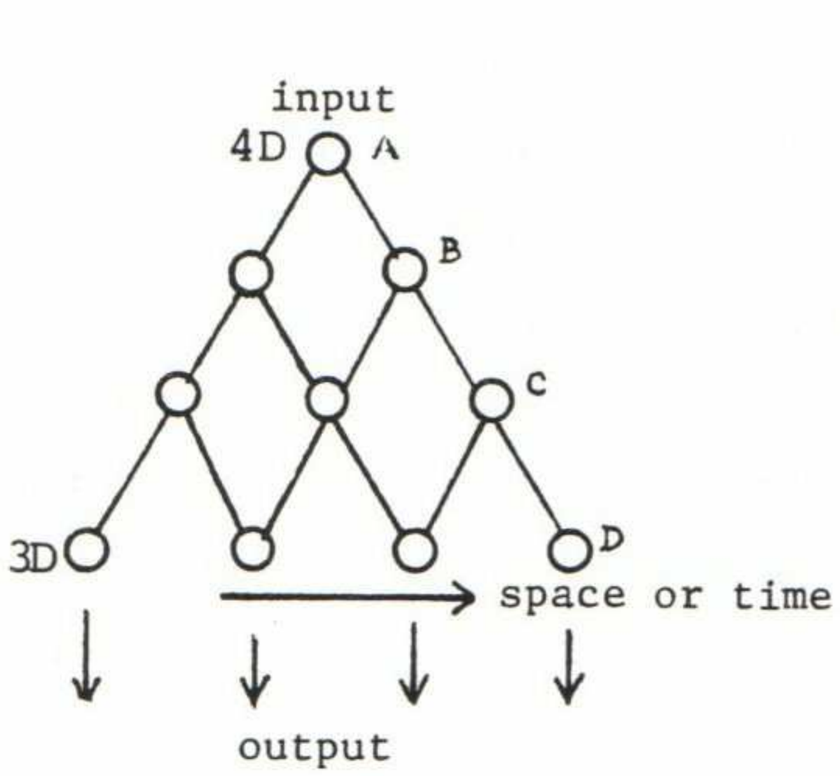


FIGURE 19

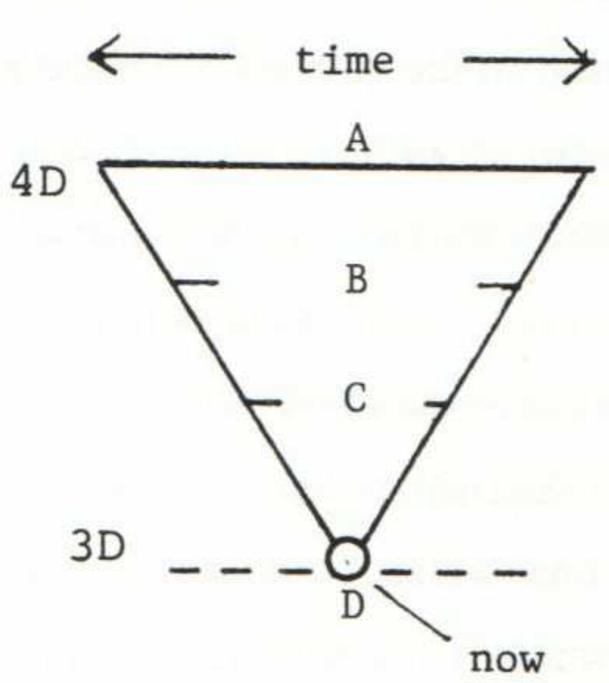


FIGURE 20

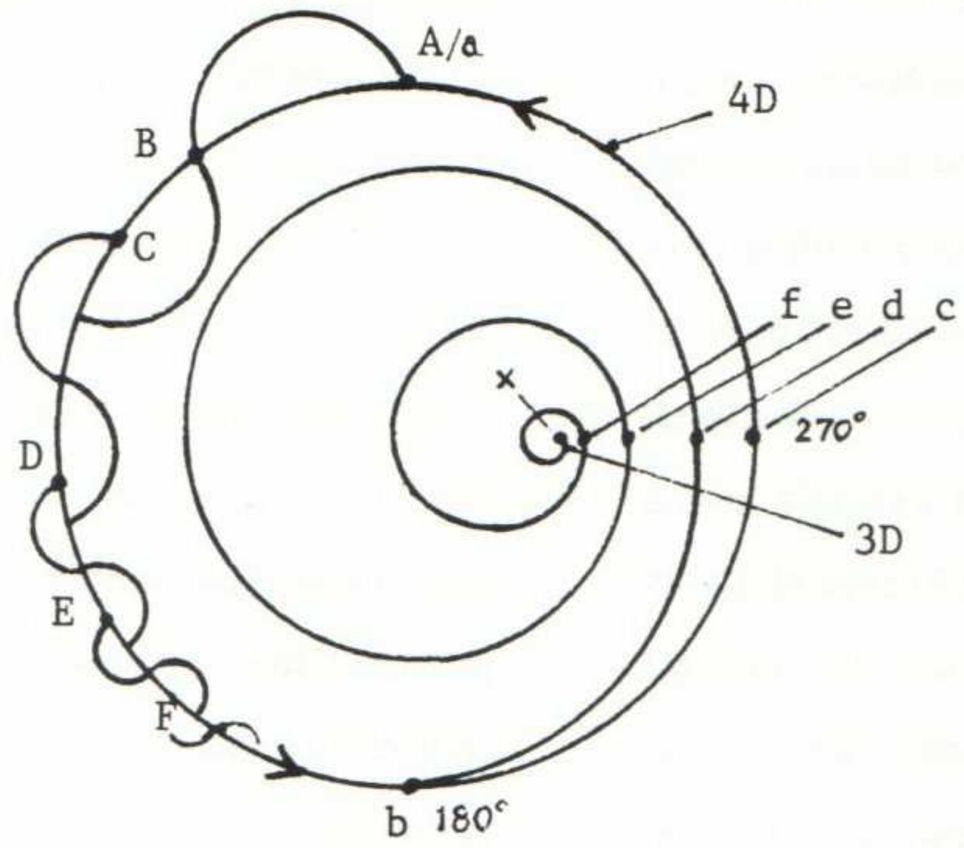


FIGURE 18

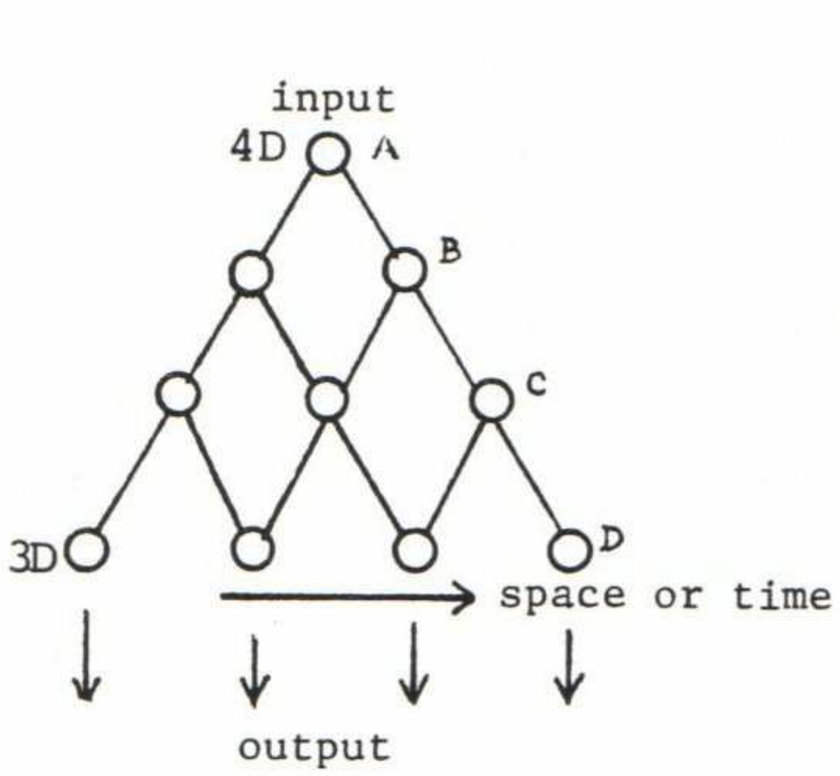


FIGURE 19

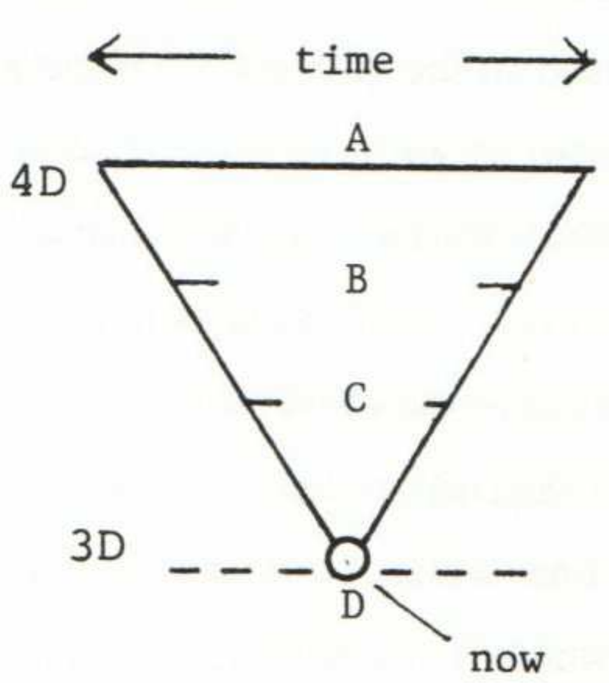


FIGURE 20

model of how any point could be located.

Note that the hardware/software (on the periphery) of the vortex may be either present with or without the spiral. One without the internal spiral will always have the ability to "collapse" inwards, filling the gradient between 4D and 3D. This would be an example of the presence of "perfect" memory (everything is recorded) but having a lack of access from 3D (the center) unless fractal "traces" are permanently established in the gradient (spiral). (Short-term memory is holding one's attention on the cyclic data but once the attention is removed the memory on the periphery cannot be easily accessed without traces (permanent fractal levels) formed in the gradient.) Or the alternative may exist, as we have just considered, that the intermediate fractal levels are established and the spiral is ever present, such as in the continuous structuring of the universe.

As implied earlier, nature's retrieval system is one which works on resonance of waves in which a lower order impinges on a slightly higher order, quantum reducing its information to the lower level. The periphery of the vortex (see Figure 18) may contain in the complex of integrated holistic sine waves (wave function) a potentially full gradient down to the 3D level, such as in a learning pattern for physical coordination. The idea of making a particular movement that is not learned will in itself consist of "fuzzy" many-probable energies, manifesting cyclically, and in order to accomplish the movement predictably, accurately and automatically, the gradient steps of intermediate sine waves must be established--see figures such as Figure 8.

12. APPLICATIONS

In dealing with the application of the model to the growth of an organism, we have also covered just about every other fundamental process; the learning-pattern structure, short-term/long-term memory, the holographic universe, even navigating to a specific location, such as in interdimensional space travel. This latter procedure on such a cosmic scale could be identical to the micro-process involved in a person's consciousness locating a few bits of information instantly (yes, it is instant) during, say, complex coordination of movements; for example, suddenly directing his of her attention to, and isolating, a finger motion.

The learning pattern has the same structure as we have already discussed and can be pictured as shown in Figure 19. Although we have marked input at the point of the pyramid, in the holistic/holographic learning pattern any point--any bit--can be the input since all bits are connected holistically; this is why the ideation state of mind in executing an automatic sequence of movement can be so vague--the attention is only required to sweep over the area, so to speak. Nevertheless, there is true amplification of input to output as implied by Figure 19. One unit at the top activates four at the output. Moreover, as skill increases, the number of bits at the output increases, that is, density of infor-

mation per unit movement, as more levels are added to give greater amplification. This is not detected since it is so gradual during practice and training. The amplification a concert pianist will have compared with a beginner regarding finger motions at the keyboard will be particularly marked.

Let us examine the learning-pattern structure again as shown in Figure 19. It represents, of course, the minutest element, and billions of such units would have to be imagined involved in a simple movement. When we use the term learning pattern we are referring to a group of pyramidally arranged bits whose relative frequencies are mathematically and harmonically related. It is holographic and can act as one whole even though the bits may be played off in a time sequence. The learning pattern is 4D; space and time are not differentiated. The spatial holistic nature is easier to understand than the temporal unity. Let us consider the latter.

Remember that unit A (Figure 19) spans all units at D. Thus we could diagram the principles of operation of this element of a learning pattern acting in time as in Figure 20. We shall eliminate the spatial distractions by considering bit D as being activated repetitively. On a much greater scale, one might wish to use as a reference the repetition of a finger motion--tapping or repeating a note on a keyboard. Now consciousness kinesthetically senses the whole of the learning pattern--all levels D to A. We see that at A, time is spanned to a degree (no differentiation within it). This is a whole, single oscillation which consciousness senses in the margin of perception and predetermines future repetitions of the movement within the span. It is literally a different time scale at this level but gradually as one moves down the levels to D, time becomes less whole. All these time scales are superposed--this enables one's attention to change focus within the span of the learning pattern, to anticipate the next movement--actually feel it before it occurs--or focus on the bit in present time. Note that when we use the phrase "present time" here we mean the material level/physical universe/ego perception observation of time--one point of energy <u>at a time</u>. Present time, as one moves up the hierarchy of consciousness (D to A), begins to include more future--as one whole (the 4D thickness is increasing).

This is an extensive subject and has been covered thoroughly in the author's psychology dissertation,[8] and to a lesser scientific degree in the book on piano technique.[9] The dissertation covers both hardware and software, the book only software (principles), but includes a mathematical rendering in the appendix. What is of interest to us here regarding learning-pattern structures is the nature of the hardware. This will come as a shock to many scholars.

Physical mobility is a dual system. Synchronous with the muscular system is a mechanism which is universal. It can be pictured as, for example, in the case of the arm mobility, concentric spheres of quantum fields

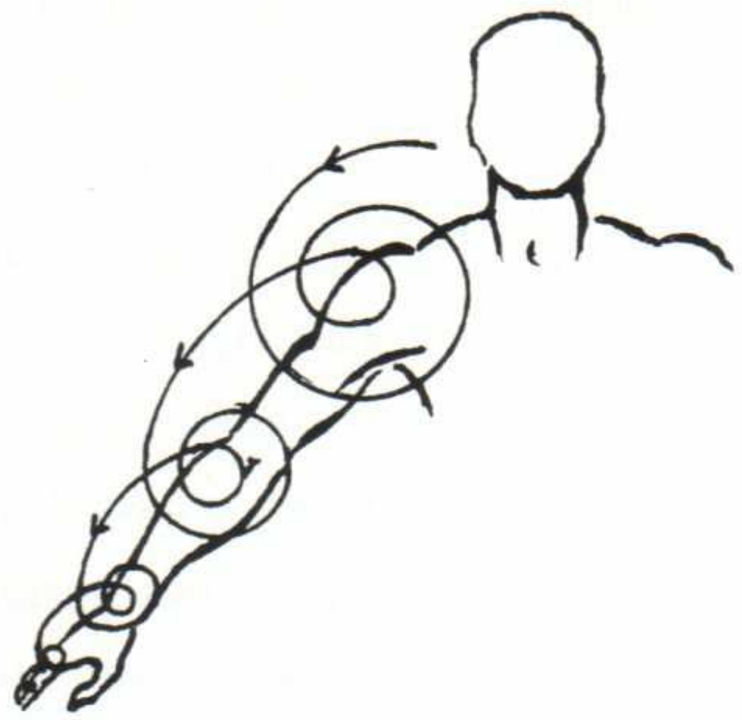
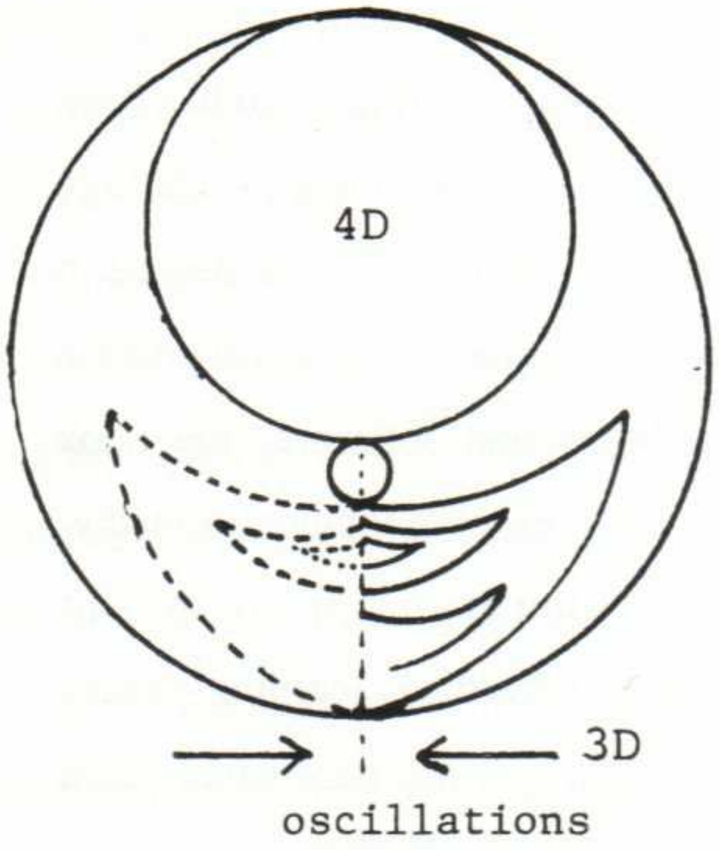
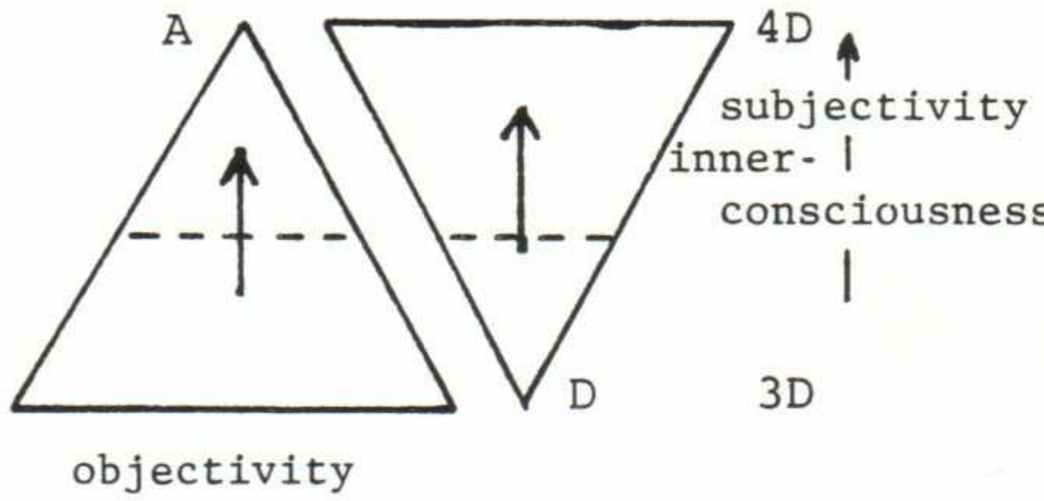


FIGURE 21



oscillations

FIGURE 22



objectivity

FIGURE 23

superposed and roughly located at the joints. These fields are oscillations and are 4th dimensional; they are in fact vortices as already described, and these are the actual learning patterns. They exist around and within the body. We feel that we control an arm directly at the point of motion, and this is true; it is not an illusion as considered in existing science. Figure 21 shows this in the spiral form. Note that the lower-ranked spirals are inside the greater ones just as earlier described; the ground-floor workers are "inside" the appropriate managers, etc. This means that the program in the region of the elbow contains in higher-dimensional form all the information below; wrist, fingers. And the shoulder vortex, everything below (inside) it, in a ranking system. Remember how the spiral works. It can precipitate any number of pulses towards its center simultaneously. These appear as a digital pattern of oscillations in 3-dimensional space. To make a movement of the arm from, say, left to right, the appropriate digital pattern will appear fractionally to the right of certain nodes (oscillations) of matter, such as, in particular, bone, within the arm--in a manner to change the joint angle. When this occurs, that is, when an oscillation at this basic level of scalar waves appears in close proximity to another oscillation (the permanent one) of the same frequency, such as the node of an atom, they will attract. Thus we see that we have a propulsion system here.

It is much more complex, however, and is actually essentially 4th dimensional as all levels in the hierarchical learning pattern (Figure 19) are participating in creating the motion. Higher quantum states are homing in also, which control the (holographic) digital pattern. A simple movement of, say, the hand and arm is such that the hand/arm is held in a vice-like grip as the fields home-in from all directions, 4th to 3rd dimensionally. For a normal and learned condition, all the oscillations within and at the different levels are in phase, harmonically (not necessarily of the same frequency); the frequency rate increases towards greater wholeness (the apex of the pyramidal configurations). This frequency increase can be thought of as due to greater force in the oscillation owing to the greater area of intersection. Figure 22 shows the basic diagram for the energy unit, plus sub-units--compare Figure 11(c). Note that Figure 22 is the same as Figure 15(b). The latter is drawn without the opposite spiral and the "withinness" aspect is not apparent.

We should point out that the above-described quantum field mechanism for physical mobility is one which acts below the level of the onset of inertia. (Inertia is not understood in mainstream science.) The true interaction is 4D to 3D; no inertia is invoked for the specific particles resonating. This could be proved if scientists took the trouble to devise a means of measuring the Newtonian reaction to accelerated motion of arms and fingers of a concert pianist and compared them with a novice. Inertia only arises in Newtonian force conditions which are 2D-3D, such as pushing on the surface of an

object to move it. Space is made up of countless oscillations (nodes) and any body at any instant for any condition of motion is locked on to (resonating with) corresponding nodes of spacetime which have the same frequency, direction and velocity as those within the body. Inertia arises from the resistance to uncoupling continuously the phase-locked condition of nodes within the body and nodes of spacetime. This only occurs within 2D-3D interactions which pull the body's nodes away from one set of spacetime nodes which were in resonance, with another set, every instant, as the body's condition of motion changes. There are always spacetime nodes which match those of the body in frequency, velocity and direction. Inertia is thus electrical.[10]

The quantum field system mentioned above acts 4D to 3D, that is, it controls the spacetime nodes and no inertia arises--it is not a force-field, there are truly no forces acting on a body in free fall as Einstein stated, but not meaning cancelled forces of gravity and inertia (which Einstein incorrectly allowed). To recognize that in the action of a falling body (or a body in free fall) the Newtonian situation is incorrect, that there is no gravitational downward force cancelling an inertial upward one (at the acceleration due to gravity) but that no forces exist--the bodies nodes are locked onto spacetime nodes and no reaction or inertia is present--transforms the whole of physics, and science is elevated into a higher order which would produce an unimaginable (by present standards) technology.

Gravity, as already implied, stems from the vortex pressuring inwards, but since the oscillation is basically 4D, our 3D space rectifies the oscillation. The opposite centripetal half-cycle of the oscillation does not encroach on our 3D space as antigravity (and would therefore cancel gravity). This has been covered in the author's other writings, but let us realize that these large vortices in spacetime--planets, stars, etc.--are creating myriads of points of intersection due to interference--this is how the grids will be formed. This region of interaction and interference forms a spacetime continuum filled with nodes (of 4D oscillations) and mini-white and black holes which are merely each opposite sides of the oscillation (that is, a black and white hole stably coupled, will be identical to the node phenomenon or 4D oscillation).

A superspace fabricated from countless nodes and black and white holes covering all directions of motion, all velocities over a certain range, all frequencies over a certain range, different durations, accelerations, etc. will constitute the basis for the once much sought-after covariant ether.[11] Some degree of thought will convince one that in such a medium, the local ether or spacetime will have the same properties for different observers. This is the reason the velocity of light comes out as constant relative to all observers. To rotate the coordinate axes of each observer (as per special relativity) to make the velocity of light come out constant is a fabrication so that theory matches

experiment, and is not necessary when one has a model for covariant spacetime. Thus by abandoning the ether, science lost another opportunity to advance into higher-order knowledge.

Having covered some information on inertia and the nature of spacetime, let us return to the subject of physical mobility briefly. The dual muscular/quantum field system is such that the quantum fields, which contain the information of the learning patterns (not in the central nervous system), actually shape spacetime during physical motion (to a degree depending on the level of ability to make movements--skill, technique, reflexes, etc.). We sometimes hear of the term biogravitational field in regard to living organisms. This is the same idea.

Just as in the phenomenon of gravity there is a flow of nodes towards the center of the body, and this region involves space, curved in the 4th-dimensional direction (as Einstein would agree), similarly the flow of nodes is controlled during the activation of learning patterns; spacetime is being engineered to some degree--curved, forming paths of least action for limbs, finger, etc. to <u>fall</u> into--as in free fall. A concert pianist skillfully maneuvering fingers in rapidly changing directions is partially curving spacetime so that the fingers "fall" in those desired directions--a rapid turn is like a straight course. To the degree this occurs (or to the degree of the development of the learning pattern) there is no inertia, no force. As one may have foreseen, this opens up a new field of training for any activities involving the skills of physical mobility, when the mechanism is understood.

We indicated earlier, before branching off into the hardware, different "present times" according to the span of the quantum along time. Although we were discussing the learning pattern, the same principles apply everywhere. The quantized strata of the learning pattern exist at the macro-level within superspace. This is a virtual state hierarchy which can be brought from the <u>unmanifest</u> state to the <u>manifest</u> state by resonance and regeneration--see the section on the fundamental principles. A spacecraft can tune to these different spacetime levels, which as we stated earlier have different time scales. At level D, in 3D, all the "bits" of energy in space are out of phase. Electromagnetic radiation is thus limited to the velocity of light. This is governed by the size of the quantum at this level. As the craft increases its frequencies (which are coherent throughout the craft) it will next resonate with level C. Since the quantum state is greater and since it takes no time to "cross a quantum" so to speak, the craft's speed restriction will have reduced, and so on up the hierarchy to A where for a particular span, say, a whole solar system (one quantum), movement from one point to another would be instantaneous and in fact would be by what we know as teleportation or interdimensional travel. (Note that this idea of quanta size in superspace is a model, and in reality represents degree of correlation; for example, a selected large region

of superspace, high in the hierarchy, will not objectively contain, say, two whole (quantum) energies but will be almost fully integrated and holistic.)

We have shown how nature's processes are entirely geometrical and form properties of spacetime itself. Nature does not need to contrive mysterious codes to store and process data. Let us consider a mere "thought"--how it is stored and processed.

We know that in man-made computer designs, the words and letters making up the words, or whole concepts, must be represented by some physical state of the hardware/software components. This is a matter of choice; a couple of "on" bits in a byte (group of 8 bits) might represent a particular letter. Nature will, however, store and process the shapes of the information or message. A thought can be seen if one considers visually perceiving the words expressing the thought and thus the mental images of the words can be constructed from the formative aspects of the wave function described earlier. Or one may just visualize the thought. Again this can be handled by shaping the energy. Finally, there may be the sound to consider, particularly where words are concerned. In this case, we already have a vibration related to the mental activity. Even in abstract thought when there is nothing to visualize, the energy will have a shape. Regarding the processing of sound information, the old Hebrew language is apparently a natural language in the sense that the sounds of the words are not artificially chosen by man (that is, could mean anything), but are resonant with the energies of the concepts behind the words.

13. THE FUNDAMENTAL PRINCIPLES

These principles were referred to earlier. They are 1) quantum reduction, as per our model, and 2) quantum regeneration. We have described quantum reduction; a process which is occurring in nature continuously as greater wholes (quantum states) reduce to lesser wholes from 4D to 3D. We must, however, have the opposite process that of quantum regeneration. This also is occurring continuously from the microscopic to the macroscopic and ranging from split-second cycles to eternal ones. A laser's power manifests as a result of cohering electromagnetic vibrations. It is not recognized, however, that a greater quantum state--whole oscillations of higher dimensions--is regenerated by the resonance of the wave elements in 3D To give a simple example: the power of 10 separate waves of light (which has the total power of about 3 waves in unison when the 10 are out of phase, as in normal light) when cohered, or set in resonance, is of the order of the square of 10; not the sum of 10 as considered. An advanced spacecraft controls the atomic frequencies of the craft--and crew, etc.--bringing them into phase and regenerating a single higher frequency oscillation further up the virtual-state hierarchy. This condition is used to attune to existing fractal levels within the cosmos such as the quantum field of oscillation of a planet, or

star or galaxy, etc. enabling the craft to instantly quantum jump anywhere within the span of the quantum (for example, a whole star system). Alternatively the spacecraft may attune to the levels in the gradient between fractal levels--planet's, star's field, etc.) and travel linearly at finite speeds but greater than the velocity of light when operating in a spacetime stratum which has greater correlation of energies than at the 3D level, as explained above.

In the case of quantum jumping, that is, teleportation or interdimensional travel, navigation to a predetermined coordinate location will be achieved by the same procedure already described: how a bit of information is addressed (Figure 18). Thus all fundamental energies are quantum reducing and quantum regenerating on a continuous basis. The signals passing between the archetype of the plant or organism, in general, and the DNA is the effect of quantum reduction and regeneration. Every thought involves the same process: concepts are quantum reduced to words (bit level) which are, say, verbally communicated to another person who quantum regenerates the word level (the words of a language already correlate) back to the concept.

14. SCIENTIFIC METHODOLOGY

The extent to which objective verification can be applied to a hypothesis determines the progress of science. This is the currently accepted mode of the acquisition of knowledge, and is unfortunately one which is exclusive of other valid means, and to this degree not only sets the upper limit to knowledge but falls prey to the illusions of the third dimension. Objectivity invokes observation with the ego, that is, by quantum reduction; it brings into existence the external world of objects across "empty" space. This is a method of observation and acquiring data in which energy is received from the environment by the ego mind. But the ego is based on the "I"/not-"I" principle due to division of a greater (whole) quantum mind state into two poles, precisely as in our previously described energy unit--see Figure 11(c) and related diagrams. The ego personality is consciousness contracted into physical perception and is one pole, the "I" in this division. The other pole--the not-"I"--is each person's environment. Each pole only exists by the presence of the other--the ego view of the environment (objectivity) occurs simultaneously with the quantum reduction of consciousness to the ego level. Thus for the ego to determine knowledge by observing the not-"I" is somewhat equivalent to the dog chasing its own tail (but does not know it is connected to this "external object"). With this analogy, another way of acquiring knowledge is for the "dog" to observe the "tail" through its "body."

Man's consciousness is connected to every point in his environment nonlocally, through the hierarchy. The information may only be received by intuition but it is real and does not depend on the above division and the consequent illusions. The information is received up the hierarchy and transmitted down

to the ego level to be received as a "feeling." There are thus two basic means of obtaining knowledge, 1) through the external world (objectivity) and 2) inner-consciousness, or direct contact with the universe. These two variables appear to be mathematically related as shown in Figure 23. As man evolves his consciousness up the hierarchy he relies less on objectivity or local and linear interaction with the environment, in inverse proportion to his utilization of his developing inner experience, nonlinear, nonlocal communication, with the physical universe. Note that his superconsciousness embraces the "I"/not-"I" as one whole.

One further point of paramount importance in indicating the restrictions of current scientific methodology, which naturally follows from the above considerations, is that science operates at level D only in Figure 23; the ego perception level of fragmentation or randomization. Science models everything on the basis of the presence of minute points of energy everywhere (which can represent quanta), and that aggregates or unity are merely composites of these particles. Not only is this limited to the lowest spacetime frame which is made up of the smallest quanta of energy out of phase with one another (phase randomization) but that each point or particle, in rigorous evaluation does have an "inside," that is, a diameter or 4D thickness. This is totally ignored in current science by making the points of energy infinitesimal. However, we know that increased correlation of energy occurs along the gradient 3D to 4D and the quantum has the potential to possess a greater spacetime span. A cell has a whole quantum oscillation, quite apart from the molecules of which it is represented in the 3rd dimension. Similarly for a whole planet, etc. Science desperately needs to be able to model unity in this manner and bridge the gap between religion, the paranormal, and existing materialistic physics.

This treatise gives an outline of a 4th-dimensional science which embraces life, mind and the universe, and can reconcile the views of the religionist and the atheist, and the parapsychologist and the physicist.

REFERENCES

1. Huntley, N. The Mechanics of Learning: A Holographic, Nonlinear Theory. Doctoral Dissertation in Psychology, published by U.M.I., 300 N. Zeeb Rd., Ann Arbor, Michigan 48106 (800-521-0600).

2. Huntley, N. The Magical Universe--A Science of the Real World. Unpublished book manuscript, 1990.

3. Crutchfield, J.P., Farmer, J.D., Packard, N.H., and Shaw, R.S. "Chaos." Scientific American, Vol. 225, No. 6, 1986.

4. Hatonn, G.C. America West books. America West Publishers, P.O. Box 986, Tehachapi, CA 93581.

5. The Magical Universe, Op. cit.

6. Huntley, N. "Einstein and Relativity." The Journal of Borderland Research, Garberville, CA: Borderland Sciences Research Foundation, Vol. XLV No. 6, pp. 12-13, 1988.

7. Psychology Dissertation, Op. cit.

8. Ibid.

9. Huntley, N. The Hidden Variables of Piano Technique and the Fundamentals of Skill. Los Angeles: Prescience Publications, 1982.

10. Huntley, N. "Two Kinds of Motion." Journal of Borderland Research, Garberville, CA: Borderland Sciences Research Foundation, Vol. XLVI No. 3 & 4, 1990.

11. Huntley, N. "A Covariant Ether and the Principles of Free-Energy Devices." Advanced Science Advisory. Lakemont, Georgia: Advanced Sciences Research and Development Corp., 1987, p.51.